

Hitchcock's Machine Tool Blue Book

NOVEMBER, 1929

TWENTY-FOURTH YEAR

Avey

DRILLING MACHINES

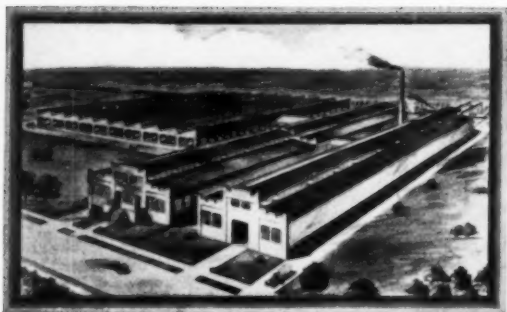
Avey High Speed Sensitive Drilling Machines are built in types and sizes to cope with varied needs. They are designed in capacities from the smallest drill gauge size to approximately 1 1/4 inches.

The Avey Catalog details the line of Avey Drilling Machines and Drilling Machine Accessories.

Avey Engineers will come to your aid in solving new and different drilling problems.

The **AVEY**
DRILLING MACHINE CO.
CINCINNATI, OHIO





An Invitation

PROSPECTIVE buyers of lathes are cordially invited to visit the Monarch plant—at any time. Here they will see how Monarch Lathes are manufactured, how they are made *smoother, quieter, more powerful*.

The size of the Monarch plant, the modern equipment used, the frequent inspections of all work in process, the spirit of enthusiasm and progress that inspires every Monarch worker—these will make a trip through the Monarch plant worth while.

**The Monarch Machine Tool Co., Sidney, O.
New York Sales Office: 857 Graybar Bldg.**

Monarch Lathes



Helical Gears - Timken Bearings
SMOOTHER..QUIETER..MORE POWERFUL



Hitchcock's Machine Tool Blue Book

**Selected
Circulation**

**25,000
Monthly**

NOVEMBER, 1929

TWENTY-FOURTH YEAR

Salesmanship on Paper Of Metal-Working Machinery

Wm. Wrigley, in *American Magazine*, defines salesmanship as "Believing something, and convincing others."

You make a machine you believe in. Write out, in the simplest language, just why you believe in it, and send your message to those who should use it.

That is all there is to good advertising.

However, the selection of the messenger for the delivery of your message is of prime importance. The BLUE BOOK will deliver it to your richest markets—to 25,000 responsible users and buyers of metal-working machinery, from coast to coast. Can anything be better?

A plain, convincing talk on the merits of your machine, with a suitable illustration, and the use of this publication as your messenger, is plain, common-sense salesmanship on paper that we do not believe can be excelled.

Write to the publishers about it, and see if you cannot get together with them on a profitable proposition.

Published By

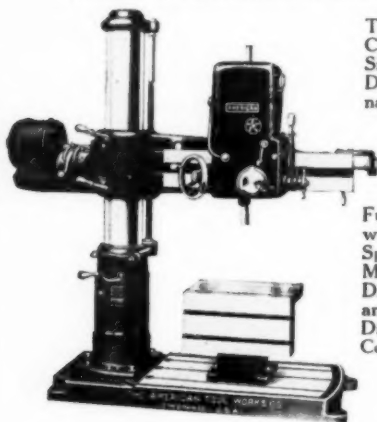
Hitchcock Publishing Co.

508 S. Dearborn St.,

Chicago, Ill.

"American" Sensitive Radials

Make Production Records



This shows our
Constant Speed
Simplified Motor
Drive for Alter-
nating Current.

Furnished also
with Adjustable
Speed Simplified
Motor Drive for
Direct Current
and for Belt
Drive thru 4-Step
Cone Pulley.

Automotive Production Engineers say of the "American" Sensitive Radial:

"THIS is a very speedy machine and meets our needs most favorably." Yes, indeed, and there is either a standard or special type which will meet YOUR needs "most favorably" too. It's our business to adapt the right tool to every specific purpose—and we've been at it for over 40 years. High speed drilling, tapping and reaming operations of extremely accurate character are best intrusted to "American" Maxi-Speed Sensitive Drills.

Write for the Interesting Folder

The American Tool Works Company

Cincinnati, Ohio, U. S. A.

LATHES

RADIALS

SHAPERS

INCREASE the OUTPUT

**from production milling equipment
with the use of BROWN & SHARPE
CUTTER GRINDING MACHINES**

The Brown & Sharpe No. 2 Cutter Grinding Machine affords a simple, rapid and economical means of keeping your cutters in the best working condition. It is always easy to find space for

one or more of these units handy to the production machines in the most crowded milling department.



Remember these features
—MODERATE COST...
FAST OPERATION...
SMALL FLOOR SPACE
... EASY TO OPERATE
— an economical investment in lowering tool and cutter costs.

*Specifications will be
gladly sent at your
request.*

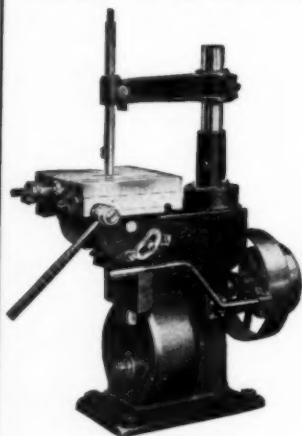
BROWN & SHARPE

BROWN & SHARPE MFG. CO.



PROVIDENCE, R. I., U. S. A.

BAKER KEYSEATERS



Built in
Five Sizes

Designed
for
Miscellaneous
Keyseating
and
Slotting

No. 0 KEYSEATER
Capacity 1" Wide—9" Maximum Stroke

*Exclusive advantages in securing Accuracy and
High Production are:*

1. Draw Stroke Drive.
2. Upper Support for Cutter Bar.
3. Tilting Table (for Taper Keyseats).
4. Simplicity In Operation.

Write for Catalogue

BAKER BROTHERS, INC., Toledo, Ohio

*Builders of Boring, Drilling, Tapping,
Keyseating and Slotting Equipment.*

The New No. 2 CINCINNATI Cutter Grinder



Patented

The new No. 2 Cincinnati Cutter Grinder, Plain or Universal, brings to you new speed, ease and accuracy of cutter grinding. You will find that it has a more universal application for all types of cutter grinding. All this is made possible for you because of careful design, high class workmanship and the following new and outstanding features.

Sensitive anti-friction table mounting.

Rugged, box-type bed with ample, cross sliding saddle support. Enclosed motor drive without idlers, providing uniform belt tension and tracking.

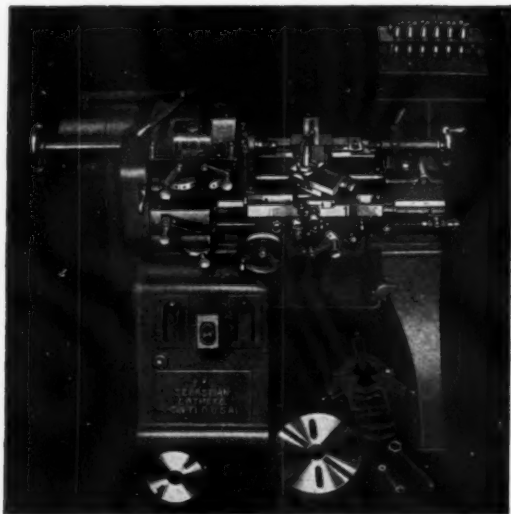
New type anti-friction spindle mounting with collet type wheel mounts.

Fixed height table and fixed operating position.

Convenient tooth rests.

Greater range.

The Cincinnati Milling Machine Co.
CINCINNATI, OHIO



11" Gold Seal Heavy Duty Precision Tool Room Lathe

Built for heavy cuts and fast work, yet aligned with an accuracy of .0005". Graduations are provided at every point. The hole through the spindle is $1\frac{5}{16}$ " diameter, and the lathe takes collets up to $\frac{3}{8}$ ". All bearings are oversize. Made in motor, and single pulley belt-driven models.

The Small Lathe you have been looking for

Powered far beyond its apparent size, generously proportioned and equipped with a completeness unequalled in its field, the 11" Gold Seal Heavy Duty Precision Tool Room Lathe offers the manufacturer a long needed addition to his lathe equipment.

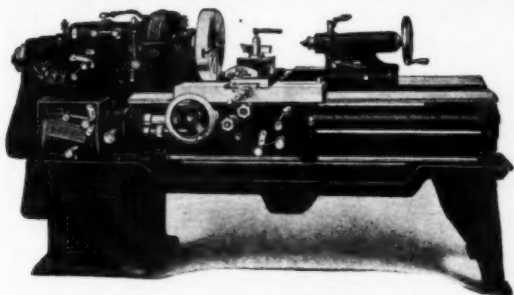
The time saving convenience, precision and versatility of this machine will reduce the cost of producing a wide range of parts—much work can be handled with it that formerly had to be done upon a larger machine.

All details sent upon request

THE SEBASTIAN LATHE COMPANY
313 Culvert Street, Cincinnati, Ohio
NEW YORK ADDRESS: Room 372, 50 Church St.

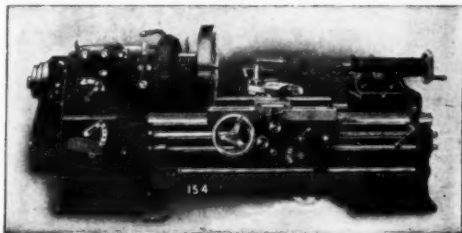
SEBASTIAN LATHES

Cincinnati Lathes



sizes 16" to 32" inclusive, Cone type or Geared Head for belt or motor drive, supplied complete for tool room, manufacturing or production work.

As these lathes give easier and quicker operation, they *guarantee* the quantity also quality of work you produce.



More than **25 years' specialization** qualifies our organization as experts to guarantee the efficiency of Cincinnati Lathes. Let us show you how to keep ahead.

The Cincinnati Lathe & Tool Co.

Oakley, Cincinnati, Ohio

**"Make-Up"
the Machine You
Need—with
these HANDY
UNITS**



**No. 2
Drilling
Head with
Overhead
Motor Mounting**

(Patent Pending)

BRADFORD

Automatic Unit Type DRILLING and TAPPING HEADS



**No. 2 Drilling Head
with Endwise
Motor Mounting.**

Any number of these heads may be combined in one unit to meet your needs for any special operation. They can be mounted at any angle—from horizontal to vertical—to meet the highest production requirements. Unequalled for drilling, reaming, hollow milling, countersinking or tapping.

Capacity of Drill Heads with 3" or 6" str., $\frac{1}{4}$ to $1\frac{1}{2}$ " in steel.

Capacity of Tapping Heads with 3" or 6 stroke, 0 to 1" in steel.

Spindle Speeds, from 75 to 2000 R. P. M.

Send for Illustrated Descriptive Folder

*Also ask for information regarding BRADFORD LATHES—
made in sizes from 14" to 48" inclusive*

The Bradford Machine Tool Co.

Precision Lathe Builders Since 1840

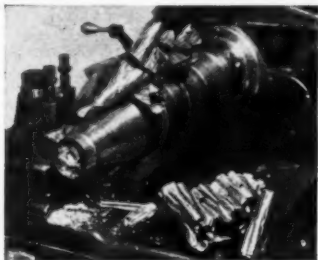
657-671 Evans Street,

Cincinnati, Ohio

Performance!

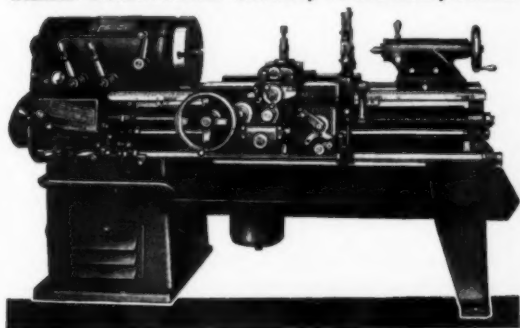
Unsurpassed —

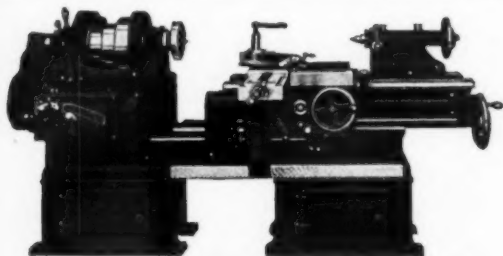
Proper design with Reed-Prentice workmanship insures results the equal if not superior to any equipment on the market.



Without tailstock: Material machinery steel, $4\frac{1}{2}$ " diam., 20" long threaded to spindle, width of cut 3", feed .012" per revolution, speed 29 R. P. M. Not a sign of chatter.

REED-PRENTICE CORP., Worcester, Mass.





Series "AG"—18/36" and 20/40" Extension Bed Gap Lathe

A Lathe suitable for a large range and variety of work at a minimum expenditure for equipment. A convenient lathe for small diameter work and one that will handle the large diameter work when occasion requires. Top bed slides along the lower one, perfect alignment in all positions. Heavy construction throughout.

Furnished either Belt or Motor driven with double back gear, quick change gear box, compound rest & c. all complete.

18/36" x 6' Belt Driven \$1725.00
Weight 3800 lbs.

20/40" x 6' Belt Driven \$1835.00
Weight 4000 lbs.

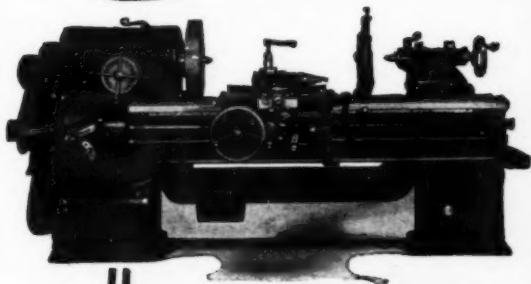
Motor prices on application

*A type of lathe worth considering
Write for information*

The Rahn - Larmon Co.
2943 Spring Grove Ave., CINCINNATI, OHIO



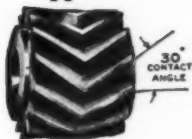
Monotrol



||



||



30°
CONTACT
ANGLE

||

Encourages Production

MONOTROL'S ability to change spindle speeds with one lever saves two-thirds of the time for this operation. It encourages production with simplicity, convenience and speed to meet the requirements of modern industry.

Examine this headstock—note the strong herringbone gears. They are always in mesh and prevent all clashing of gears, stripping of teeth and chatter-marking work.

Whatever the work—if you are interested in greater efficiency, accuracy and long life investigate the Monotrol. Write today for complete data on this better lathe.



The Sidney Machine Tool Co.
SIDNEY, OHIO

Announcing—

the New NAMCO Opening Die with
QUICK REMOVABLE

CIRCULAR CHASERS



more than

10 TIMES the ordinary chaser life

The Chasers are precision circular forming tools, mounted upon hardened steel Chaser blocks the faces of which are ground to the exact helix angle.

Reduced wear and tear to the vital Chaser surface, due to clearance back of the leading edge, insures permanent accuracy and thread quality, and explains the extraordinary runs between grinds.

Send for complete specifications and prices on this remarkable new Threading Tool.

THE NATIONAL ACME CO.

CLEVELAND, OHIO

WINDSOR, VERMONT

New York

Detroit

Chicago

Agencies in Principal Foreign Countries

A Clickety Bang— and a Bangety Click—



*All day long, it is
singing this song—*

AND it's there—(on a box nailing machine) with the punch, with the power, with the easy make, instant break, and the dragfree idling.

The Conway Disc is a Splendid Clutch

The gasoline locomotive, the punch press, the power shovel, the mower, the hoist, the oil rig, the pump, the conveyor, the ditcher, all have drives, the functioning of which can be enhanced many fold by installing the Conway Disc Clutch where the effort meets the work.

Only its capable functioning can speak eloquently enough to describe its capability and smoothness of operation.

Order one and put it to work in your conditions, under your own scrutiny. Its superior performance will win your decision to adopt it.

At it since 1904—Our Engineering Department has a carload of clutch experience. It's at your disposal.

—WRITE—

The Conway Clutch Co.

West 6th Street,

Cincinnati, Ohio

"Incorporate Dependability into Your Product"

Improved Planer Design

FEWER parts, easier control, greater accuracy, greater speed and more all around efficiency are some of the features which characterize the new Cleveland Open Side Planers. These features not only increase your production, but reduce the machining costs on each operation. Have you received our folder which describes this New Planer, showing its many special features and advantages which are not to be found on any other planer?

The Cleveland Planer Company

Established 1900

3148 Superior Ave.,

Cleveland, Ohio

Over 1100 Installations

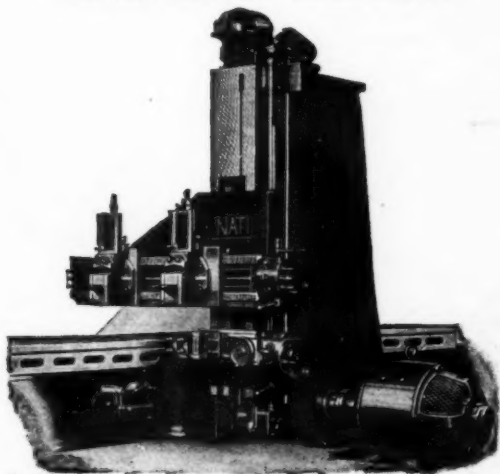
**Send
for
Descriptive
Folder
NOW!**

26 in.
to
72 in.



The Open Side Planer with the Column Base Cast Integral with its Closed Top Bed.

CINCINNATI HYPRO OPEN SIDE



High Production Features:

**Selective Dial Feed
Rail Clamping Device
Instantaneous Rail Lift
Rapid Power Traverse
Forced Lubrication
Combination Steel
Herringbone and Spur Gear Drive
Long Inverted Dovetail Down-Slide**

The Cincinnati Planer Co.

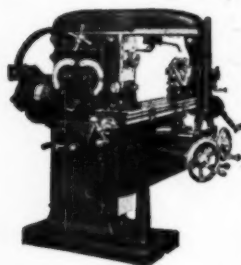
Cincinnati, Ohio

Save \$700 to \$1000 on a Miller!

WITH these machines a high standard of accurate milling can be maintained. The standardized spindles are forged from high carbon chrome nickel—every gear, shaft, clutch and stud in the driving and feed mechanism is either pack hardened or heat treated.

No. 2 Ohio
Universal
Constant Speed
\$ 1775

No. 3 Ohio
Plain
Constant Speed
\$ 1880



Consider

these features also:

(1) Vee-flat overarm; (2) complete interchangeability of arbors, chuck, etc.; (3) fully inclosed motor—readily accessible; (4) quick-stop brake; (5) disengaging hand wheels; (6) automatic lubrication; (7) 16 feeds—16 speeds; (8) sensitive control starting lever; (9) pilot wheel for each operation to overarm; (10) gauging strip.

Reasons for Low Prices

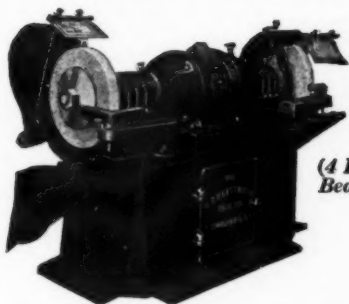
Increased production makes possible manufacturing economies.

While incorporating every feature essential for economical milling—these machines run right handed and do not have reversing mechanism, dual control or frictionless bearings.

WRITE FOR MILLER CATALOG

THE OESTERLEIN MACHINE CO.
CINCINNATI, OHIO

One of the many U. S. Grinders



*(4 Ball
Bearings)*

U. S. Heavy Duty Grinder

Designed and built to withstand continuous production service under most severe conditions. Chrome-manganese alloy steel spindle. 4 heavy duty SKF Ball Bearings. Powerful motor (A. C. and D. C.) built to A. I. E. E. standards, rated for continuous service at full load with temperature rise of 40 degrees. Many other exclusive features. Furnished in 16", 18", 20", 24" and 30" sizes.

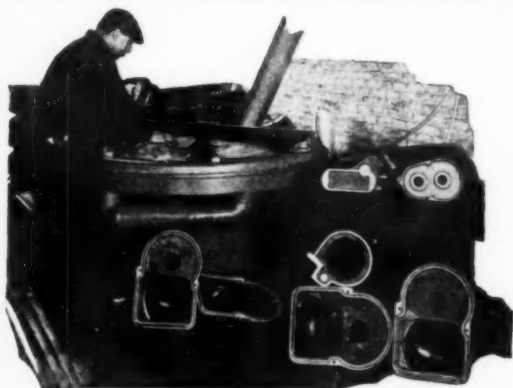
*Ask
Your
Jobber*



*or
Write Us
Today*

THE UNITED STATES ELECTRICAL TOOL CO.

Oldest Builders of Electric Drills and Grinders in the World
2461 West Sixth St., Cincinnati, Ohio, U. S. A.



**35 large gear covers
ground per hour**

THAT'S ONE of a host of flat surface jobs handled rapidly and economically on

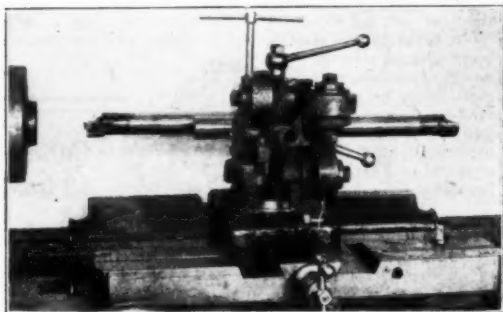
GARDNER Horizontal Grinders

*Let us PROVE what GARDNER-GRINDING
can do—Write for Horizontal Grinder Bulletins!*

Gardner Machine Company
Near Wheeler Ave., Beloit, Wis., U. S. A.

An Engine Lathe Plus the Duplex Turret Tool Post

**Makes an Efficient Cost Saving Turret Lathe
for Small and Medium Production**



Only ONE Set-Up Necessary

THE DUPLEX Turret Tool Post is the only engine lathe post that mounts a sufficient number of tools for turning, facing, boring and threading chucked work without changing tools or losing micrometer adjustment. Why pay a skilled lathe hand dollars a day for setting tools and taking trial cuts? Use the DUPLEX—one set-up—one micrometer reading and you're ready for quantity production. Increase output—save time and money.

Really a Universal Box Tool

The DUPLEX Turret Tool Post consists of a central block of forged steel mounted on a vertical axis, and is adapted to hold one or more auxiliary turrets. Provision is made for holding two boring bars, as shown, and the fourth face of the main turret may support a tool holder for holding tap, reamer, die or knee tool. Post is extremely versatile—set-up combinations are practically unlimited. Finest materials and workmanship.

Write for Complete Description and Prices

C. M. CONRADSON

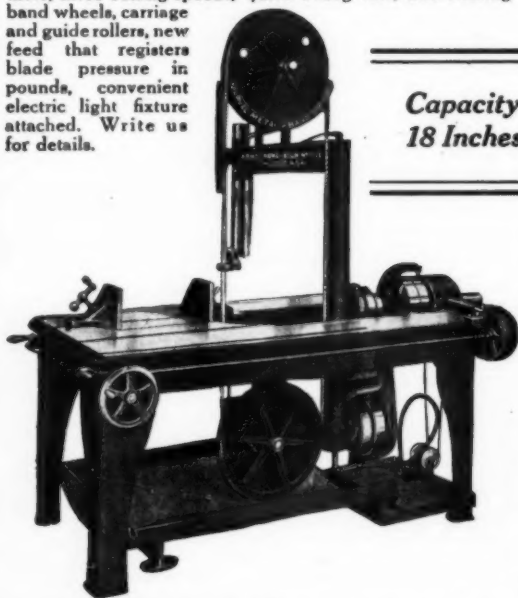
Green Bay, Wisconsin,

U. S. A.

MARVEL

The Marvel No. 8 Metal Band Saw is a standard tool in hundreds of the best shops. It cuts off square or any angle right or left to 45 degrees, has big roomy bed or work table, three cutting speeds, quick acting vise, ball bearing band wheels, carriage and guide rollers, new feed that registers blade pressure in pounds, convenient electric light fixture attached. Write us for details.

*Capacity
18 Inches*



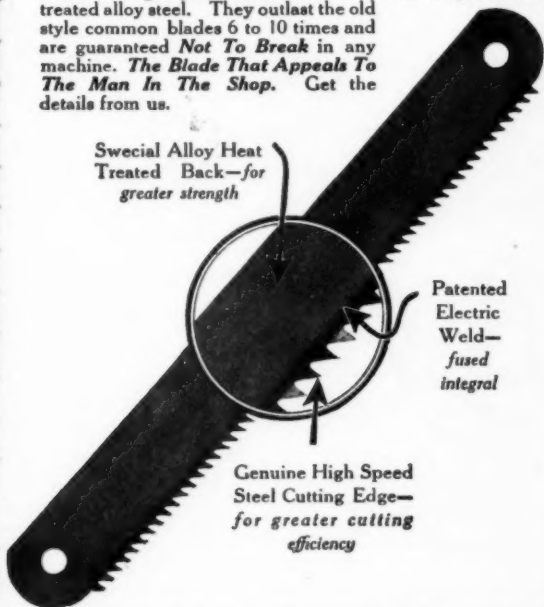
ARMSTRONG - BLUM

341 N. Francisco Ave.,

MARVEL

BLADES THAT ARE DIFFERENT

High-Speed-Edge hack saw blades have a cutting edge of *Genuine High Speed Steel* welded to a back of special heat treated alloy steel. They outlast the old style common blades 6 to 10 times and are guaranteed *Not To Break* in any machine. *The Blade That Appeals To The Man In The Shop.* Get the details from us.



Special Alloy Heat
Treated Back—for
greater strength

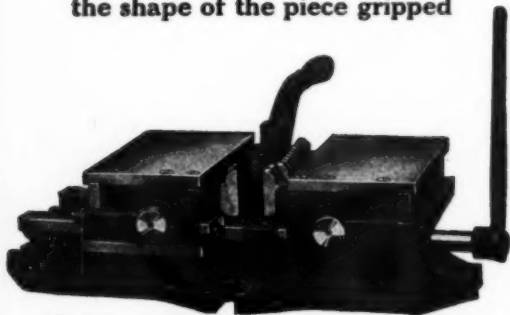
Patented
Electric
Weld—
fused
integral

Genuine High Speed
Steel Cutting Edge—
for greater cutting
efficiency

MANUFACTURING CO.
CHICAGO, ILLINOIS

What You've Been Looking For

A vise with jaws that assume
the shape of the piece gripped



Berjo

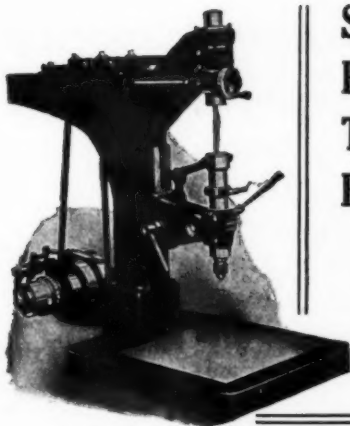
Machine and Bench Vises

Berjo vises have multiple compensating jaws which hold *regular* or *irregular* shaped parts positively and securely. The principle

is simple. A practical mechanical arrangement back of the jaws allows them to follow the contour of the work. Two main jaws, one fixed, one movable, hold the segmented compensating jaws. Berjo vises are suitable for all classes of work, but particularly adaptable to the tool room and the shop where a number of variously shaped pieces are going through.

Manufactured by the makers of Avey Drilling Equipment.

The Avey Drilling Machine Co.
CINCINNATI



**Speed
Eliminates
Twist Drill
Breakage.
WHY?**

**THE
SPEED KING**

Avey

**No.
 $\frac{1}{2}$**

**SPEED
12,000
R. P. M.**

***Ask for full
Information***

A fine twist drill will only stand so much pressure with resistance until it snaps.

Put enough speed behind that little tool and it cuts so fast that resistance disappears and it's just like cutting butter.

It Pays to Specialize

**The Avey Drilling Machine Co.
CINCINNATI, OHIO**

Production Accuracy at low operating cost



**TIMKEN
ROLLER
BEARINGS**

**Ready for
the Job!**

15-inch Sliding Head Sensitive Drill

**Mounted on Box Type
Column with
Oil Groove Table**

**Spindle Speeds—
400, 850, 1750 R. P. M.**

Capacity 0 to 1½".

**This drill can be furnished
in speeds ranging from
400 to 10,000 R. P. M.**

SPECIFICATIONS—1 Spindle

Overhang.....	7½"
Vertical adjustment of sliding head.....	9½"
Traverse of feed rack.....	3½"
Center of spindle to column at gap.....	8½"
Center of spindle to planed column face.....	7½"
Distance between spindle centers.....	
Size of Table.....	16"x20"
Size of base of lower column.....	23"x18"
Maximum Distance from spindle to table.....	33"
Width of table bearing on column.....	4"
Height to upper edge of top bearing cap.....	73"
Net wt. mounted on base & pedestal.....	505 lbs.
Crated weight.....	613 lbs.

Canedy-Otto Manufacturing Company

Main Offices and Factory—Chicago Heights, Illinois

**New York Branch
407 Broome St.**

**Complete stock
carried at branches**

**San Francisco Branch
955 Folsom St.**

The Improved Canedy-Otto No. 29

Ready for the Job



3 Spindle Speeds
720-1430-3000 R. P. M.

Completely
Motorized—
Also Furnished
Belt Driven

The Improved Canedy-Otto Sensitive Bench Drill comes complete with toggle switch, cord, socket, $1\frac{1}{2}$ " endless leather belt, and chuck. The motor is adjusted on a sliding base that maintains the proper tension on the belt at all times, and cuts lost motion and vibration to the minimum. Now equipped with a 3-step cone pulley which gives three spindle speeds of 720, 1430 and 3000 R. P. M. Complete information, with close price, upon request.

Canedy-Otto Manufacturing Company

Main Offices and Factory—Chicago Heights, Illinois

New York Branch
407 Broome St.

Complete stock
carried at branches

San Francisco Branch
955 Folsom St.

Our Latest Type Multi-Duty All Ball Bearing Radial Drill



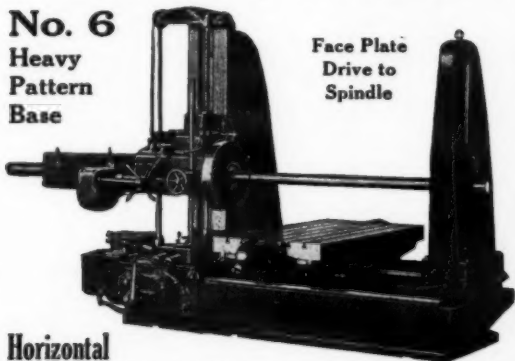
Sizes 3 to 8 Ft.

The Dresses Machine Tool Co.
CINCINNATI, OHIO

The New Improved **DEFIANCE**

No. 6
Heavy
Pattern
Base

Face Plate
Drive to
Spindle



Horizontal **Boring, Milling, Drilling and Tapping Machine**

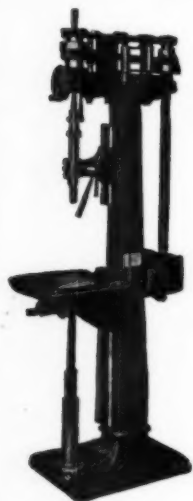
The Defiance Line of Horizontal Boring Mills embodies many special features including independent rapid traverse to head and platen in all directions, moving 84" per minute; thoroughly enclosed head; forced feed lubrication; centralized control; unit construction of head, feed and speed boxes, and many more efficient aids to production. Simplicity, great strength and ample power enable you to handle a wide range of work with profit.

Write for the descriptive folder, or for the complete Catalog of "The Defiance Line" of Cylinder Boring Machines, Heavy Service Drilling Machines, Rail Drills, Horizontal and Vertical Multiple Drilling Machines, Multiple Tapping Machines and Value Grinding Machines.

The Defiance Machine Works
Defiance, Ohio

**Designers and Builders of Precision-Production Machine Tools and
Special Woodworking Machinery**

FOOTBURT



A Single Spindle Footburt Sipp Sensitive Drill

**Made in three
sizes of single
and multiple
spindle models**

More holes with this machine

Why? Because you can change speeds in two seconds or belts in ten seconds—because the automatic idlers keep the belt pulling to capacity at all times—because the full ball bearing equipment and accurate machining gives a smooth, fast cut.

Write for No. 650 Folders

The Foote-Burt Company, Cleveland, O.

FOOTBURT

The Answer to the HOLE Question



Style C-6-A

Capacity:
No. 52 to 2½"
Drills

Grand Rapids Drill Grinders

WHAT efficiency rating would you give your drilling department? Do you get the most holes possible per day? Do you get the most holes possible per dollar of cost for drills, power, etc.? For maximum results you must have a highly efficient drilling machine and high grade twist drills—and the twist drills *must be ground correctly*. The Grand Rapids Drill Grinder will do as much as the other two combined to put you at the pinnacle of drilling efficiency—any inexperienced man, boy or woman can, in a couple of hours, be taught how to turn out *perfectly ground* drills.

*Send for Illustrated Book which gives Complete Details
and much information on Grinding Problems*

**GAILMEYER AND
LIVINGSTON CO.**

342 Straight Ave.,

Grand Rapids, Mich.

ONSRUD HAND GRINDERS

14,000 R.P.M. 28,000 R.P.M.
PNEUMATIC TURBINE DRIVE

Give Small Wheels Correct SPEED and
POWER For Maximum Cutting Capacity

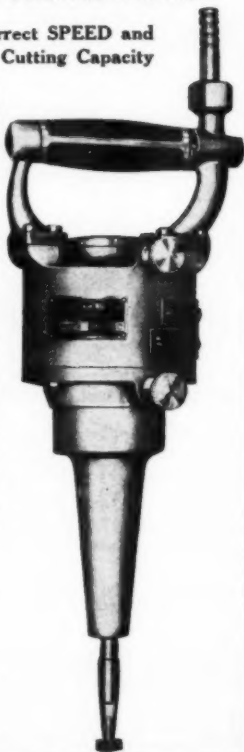
ONSRUD GRINDERS expedite the sinking and regrinding of dies by delivering the proper speed and power to small wheels. They are light in weight and designed to handle nicely, enabling the mechanic to execute his grinding in a minimum of time.

The Onsrud Pneumatic Turbine Principle constitutes the Ideal High Speed Drive for portable use. It is of simple construction with no other parts but bearings to deteriorate. These are constantly maintained cold by exhaust air and, together with light rotor weight, will give unusually long life.

Write for Bulletin

**Onsrud
Machine Works,
Inc.**

3906-32 Palmer St., Chicago



A New Ship With An Old Pilot and Crew



Twelve years ago the writer took the helm of the Hill-Curtis Company. It's a fair statement to say that today we occupy places of leadership in three distinctly new lines of

Polishing, Grinding and Sawing Machinery.

It seems fitting that we adopt the name of

Hammond Machinery Builders

to better express our new products and the writer's ownership and management.

This name signifies no change in either organization or policies. The Pilot and Crew are pleased at this opportunity of thanking our many friends for having made our advancement possible, and for our fine new home. I promise that all of us will always be *doing a little more than you expect*—that's our policy.

Sincerely,

President

Hammond Machinery Builders
INCORPORATED

Grinding, Polishing & Sawing Machinery

KALAMAZOO, MICHIGAN

Formerly

	HILL-CURTIS GRINDING & POLISHING MACHINERY MOTOR DRIVEN & BELT DRIVEN TIMKEN ROLLER OR BALL BEARING HILL-CURTIS CO. KALAMAZOO, MICH.	
GRINDERS All Sizes Electric & Belted		POLISHERS All Sizes Electric & Belted

Illinois Plain and Surface Grinder



No. 10

This machine has been designed to meet the popular demand for those wanting a general purpose grinder. One end is arranged for surface grinding and the other end for tool or plain grinding.

Special Features

Base: Box type construction, with liberal bearing space for knee, insuring accuracy.

Knee: Supported by elevating screw having ball thrust bearing. Hand wheel graduated in thousandths, long bearing on column.

Spindle: Made of High Carbon Steel, heat treated, runs in 4 Timken tapered roller bearings, adjustment collars to each bearing. Bronze bearings furnished, if desired.

Countershaft: Ball bearing with tight and loose pulley and belt shifting device.

Lubrication: Alemite system for spindle and countershaft.

Write for Complete Specifications and Prices

Illinois Machine & Mfg. Co.
LaSalle, Illinois

10 "REASONS WHY" *The* LEHMANN Is An EXCEPTIONAL Engine Lathe

16 Speed Headstock: Running in oil—simplicity of construction—only 10 gears required—all gears heat-treated or hardened—all shafts, except spindle, mounted on ball bearings.

Spindle: Alloy steel—hardened and ground—patented double spindle nose.

Carriage: Wide bridge—good depth.

Tailstock Spindle: has improved locking device.

Bed: Deep and wide—braced by large cross-ribs—chilled ways.

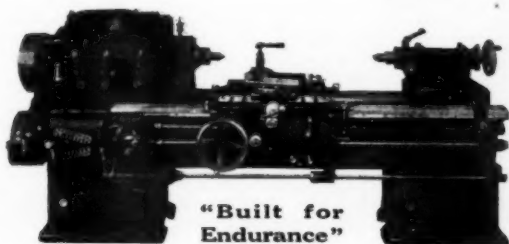
Apron Control of Clutch: for forward and reverse—similar handle at headstock end.

Apron: Double plate type—removable front plate—central oiling system.

Rod and Screw Shift: Positive and safe.

Patented Quick Change: Wide range—central oiling system.

Improved Friction Clutch: Forward and reverse—running in oil—self adjusting.



"Built for
Endurance"

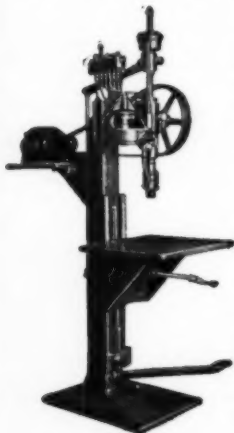
**Geared Head and Cone Head—Double Back Geared
Made in Sizes from 16" to 24"**

*Write for Catalog which gives Complete Details
of these 10 Features—It's interesting reading!*

Lehmann Machine Co.
3571 Chouteau Ave., St. Louis, Mo.

Our NEW No. 2 Heavy Duty Automatic MAGAZINE FEED Screw Driving Machine

THIS machine, like its famous predecessors, was designed to help you lower your screw driving costs. A medium sized, heavy duty type, it will drive without change or adjustment, any three consecutive sizes of wood or machine screws from No. 6 to No. 14 inclusive, and up to 1¾" long. Quickly interchangeable sets of parts can be furnished to increase range if so desired—no change is necessary for different length screws.



Its greater depth of throat allows screws to be driven to the center of a 48" circle in work not over 6" high.

The NEW magazine feed Reynolds is especially adapted for high speed production and long uninterrupted service, and incorporates a number of improvements and refinements, chief of which is the Chuck with Equalizing Jaws.

Tell us the dimensions overall of your work, the length and gauge of screws used, and we'll send facts and figures showing how the REYNOLDS will save YOU money.

The Reynolds Machine Company
Dept. H. H., Massillon, Ohio

Avoid Production Tie-Ups

By Using

SIMPLEX SAFETY STOP MOTIONS

Protect your automatic machines and processes against Breakage, Overruns, Jams, Mis-feeds, or any change beyond pre-determined tolerance—no matter how small, or how many. Simple to install, easy to maintain, SIMPLEX SAFETY STOPS insure you against delay in production and help to produce work of the highest quality and uniformity.

**Guard ANY NUMBER of Danger Spots at the
Cost of ONE Mechanical Stop**

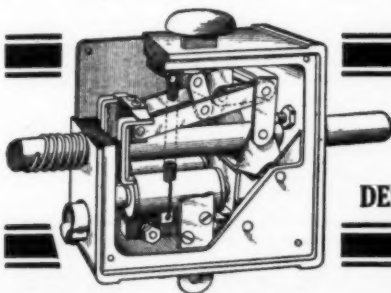
One SIMPLEX SAFETY STOP will simultaneously guard any number of places on your machine—at any distance from the stop. Instantaneous in action—no waiting for completion of a cycle. No machine too big, or too small—absolutely no fire hazard or interference with operation of the machine.

*Write Today for Illustrated Booklet—Showing
Sample Wiring Diagrams*

THE ATLANTIC COMPANY

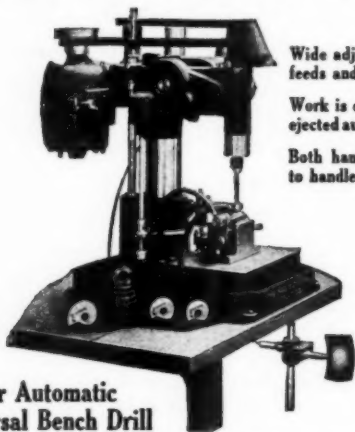
Box 133, Station B,

Brooklyn, N. Y.



**SIMPLE
100%
DEPENDABLE**

For Large Production Drilling In Small Parts of Varied Shapes



Wide adjustability of feeds and speeds.

Work is clamped and ejected automatically.

Both hands left free to handle work.

Stecher Automatic Universal Bench Drill

The number of holes that can be drilled in a given time on the "Stecher Automatic" is limited only by the capacity of the drill.

The wide adjustability of speeds and feeds; the automatic clamping, releasing and ejection of work; the control of feed by a slight knee pressure, leaving both hands free to handle work—these are some of the features that make the "Stecher" such a *remarkable producer at bed-rock cost.*

The mere pulling of a lever changes the "Stecher" from an automatic production tool with power feed into a high speed drill press with sensitive hand feed. We can also furnish dial, rotary or magazine feeds to suit conditions.

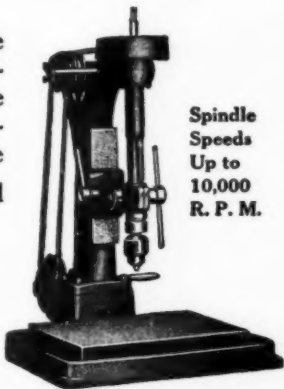
*Write for folder, which gives the complete description
Also send us samples of your small parts to be drilled*

The Chas. Stecher Co., 2452 N. Greenview Ave.,
CHICAGO, ILLINOIS

Don't Forget—

**Wood, Fibre, Rubber,
Paper, Mica, Bakelite**

as well as the
ordinary met-
als can be
drilled to ad-
vantage on the
**Leland-Gifford
Super-
High-Speed
Ball Bearing
Drilling
Machine**



**Spindle
Speeds
Up to
10,000
R. P. M.**

**Write us about this Drill to speed
up your drilling operations.**

Ask for Bulletin No. 502

Leland-Gifford Company, - Worcester, Mass., U.S.A.

BRANCHES

**BOSTON CHICAGO CLEVELAND
DETROIT NEW YORK
PITTSBURGH ROCHESTER**

AGENTS

Hendrie & Balhoff	Denver
F. E. Satterloe Company	Minneapolis
Smith Booth Usber Co.,	Los Angeles
Herberts-Moore Machinery Co.,	San Francisco
F. F. Barber Machinery Co.	Toronto

LELAND - GIFFORD

**Tap Breakage is Minimized
If You Use**

**THE
F R E W
Automatic
TAPPER**

**No. 1
Capacity
to $\frac{1}{2}$ "**



*Timken Roller Bearing
Equipped*

Long bronze bearings, carried in Timken Roller Bearings, eliminate crooked tapping and tap breakage. The alignment is so perfect that tap withdraws from hole without the slightest chance of stripping the last thread. The FREW will meet your most rigid requirements on standard long run jobs—and on short runs too. Multiple heads and foot lever attachment may be secured.

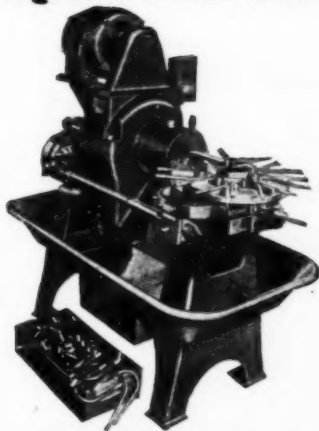
Other FREW Advantages Include:

1. Permanent spindle alignment which is unaffected by tight belts.
2. Wide belt surfaces, giving greater power to spindle.
3. Simplicity of operation.
4. Ease of adjustment.
5. Elimination of "cocked" spindle.
6. Fewer parts.

*Write for complete information—and if you have any
production tapping problems, we'll be glad to help you*

THE FREW MACHINE CO.
124 West Venango St., PHILADELPHIA, PA.

Spare Your Automatics!



**Do Your
Threading
Faster—
Better—
and at
Less Cost
on the
Single
Purpose**

RICKERT-SHAFER Automatic Threading Machine

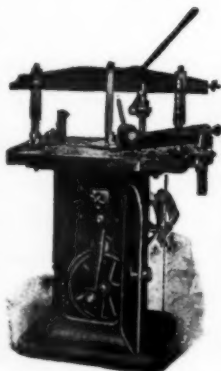
IT'S A WASTE OF MONEY to use your high-priced automatics for threading purposes when you can use R-S Second Operation Machines instead. Simple—low priced—versatile—they increase production and decrease costs.

THE R-S THREADING MACHINE is the only automatic threader which meets the exacting demands of accuracy among automobile manufacturers. Handles practically every job of threading, from the simplest to the most complicated. Combination tools can be supplied so that chamfering, reaming, facing, etc., can be done simultaneously with the threading, and with but one chucking.

Write for the Descriptive Folder and Prices

RICKERT-SHAFER CO., Erie, Pa.

**For Quantity Production
Or
Mixed Runs**



**The
DAVIS
Keyseater**

Can be profitably used on quantity production of standard parts, yet is so versatile and lends itself to such quick set-ups that it is indispensable for the mixed runs of every day job work.

MADE IN TWO SIZES:

No. 1 Cuts $\frac{1}{16}$ " to 1". No. 2 Cuts $\frac{1}{16}$ " to $\frac{5}{8}$ ".

The DAVIS will cut perfect keyways in pulleys, gearblanks, bell cranks, crank handles, etc., and does slotting and oil grooving. Simply constructed, difficult to get out of order and occupies little floor space. Every shop that uses the DAVIS is assured of quick, accurate, economical production.

*Write for Complete Information, including
Table of Cutting Time*

Davis Keyseater Company

255½ Mill St., Rochester, N. Y., U. S. A.

Abolish Expensive Hand Finishing with a



Simplex-A Abrasive Band Grinder

This grinder accelerates production and cuts costs. Hand emerying or filing operations are antiquated in comparison. The use of this new modern machine assures straight grain finishes with sharp edges. Details of this and other styles and sizes on request.

WALLS SALES CORP., 96 Warren St., New York

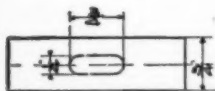
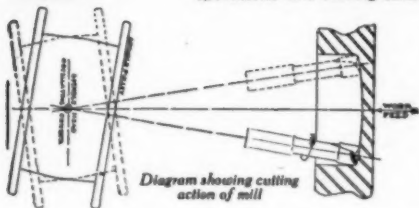
SUPERIOR Slot Milling Machine



Maximum Capacity
Slots $\frac{3}{8}$ in. wide
 $2\frac{1}{4}$ in. long

THIS MACHINE is designed for milling slots accurately and rapidly with a two lip end mill, by swinging the mill in an arc of a circle while it is revolving. The swinging of the mill is controlled by an adjustable throw crank. Table carrying work is fed automatically and the rate can be varied as required. Equipped with ball bearing spindle. Table is $6\frac{1}{2}$ " wide and $9\frac{1}{2}$ " long over oil channels; working surface $3\frac{1}{2}$ " wide, 7" long. Travel, 4" Teeslot $\frac{5}{8}$ " wide.

*Send for Descriptive Bulletin with
Diagrams showing various slotting
operations and cutting time*



*Material—Machine Steel
Time 3 minutes*



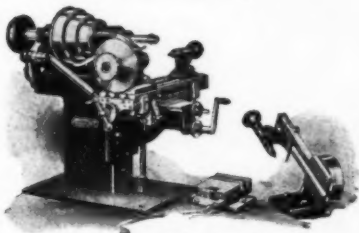
*Material—Machine Steel
Time 3 1/2 minutes*

Superior Machine & Engineering Co.
1920 Ferry Park, Detroit, Mich.

HARDINGE

Milling Economy!

With New Conveniences and a Wide
Range of Feeds, This Miller Affords
You Real Savings



Cataract Bench Milling Machine

MANY YEARS of practical experience taught the designers and builders of this Bench Miller just what ought to go into a machine of this sort. You will find it unusually useful, doing its work with precision accuracy, and having available a wide range of feeds for practically all jobs that come within its range.

*Complete data and the interesting
price gladly sent you on request*

Hardinge Brothers Inc.
4149 Ravenswood Ave.
Chicago, Ill.

ABBOTT



Ball Burnishing Barrels

Would cutting the cost of finishing your small metal parts enable you to meet competition?

If so, you will be interested in the results which Abbott Ball Burnishing Barrels can give. A finer finish in shorter time on a production basis.

An investigation will be worth your while and will cost you nothing. Send samples for an experimental burnish.

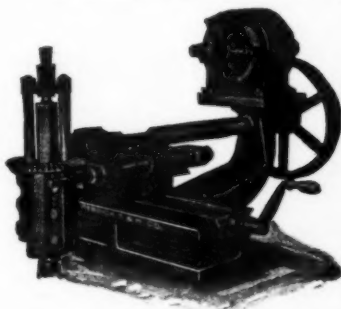
The Abbott Ball Company

"Originators of Commercial Ball Burnishing"

1043 New Britain Ave., Hartford, Conn.

Without a Pedrick
Portable Milling Machine

**You Often Pay Its Price
In Delay On One Job**



To appreciate its value just add the savings you could effect in a year by taking this handy, ever-ready tool to the job instead of bringing the job to the tool, then subtract the price. Result—net earning power.

You need this Pedrick Miller to do those big jobs that your standard machines cannot handle.

Catalogue explains all its various operations—
a comprehensive book of reference and key
to manifold savings. Your copy is waiting—
shall we send it now?

Pedrick Tool & Machine Co.

Headquarters for Portable Machine Tools
Boring Bars, Crank Pin Turners, Pipe Benders, etc.

3644 N. Lawrence St.,

Philadelphia, Pa.

Taylor & Fenn Belt Driven
No. 12 Spring Press



**UNIFORM BLOW
SPRING PRESSES**

Are made in
three sizes,
with either
single or
double action

Our No. 12 Belt Driven Spring Press, illustrated above, has a stroke of $3\frac{1}{4}$ inches. The foot treadle operates a safety clutch attached to the flywheel, which automatically stops the machine after each stroke regardless of whether the treadle is released or held down by the operator. The clutch can be adjusted for a continuous stroke if desired.

Descriptive circular gladly sent upon request

The Taylor & Fenn Co.
Hartford, Conn., U. S. A.

KRW Hydraulic and Sensitive ARBOR PRESS

**Gives All - Around
Efficiency at very
Low Cost**

THE latest improved combination KRW Hydraulic and Sensitive Arbor Press includes many improvements not found in any other press, at any price.

35 TONS CAPACITY

Hydraulic pressure easily operated by one hand controls movement of ram to one-thousandth of an inch movement. Automatic air vent and pinion brake holds ram at any height when not in use.

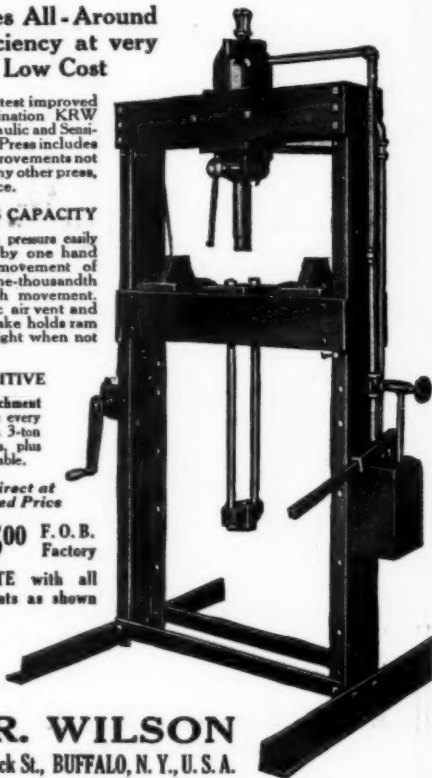
SENSITIVE

Press Attachment incorporates every feature of a 3-ton bench press, plus adjustable table.

*Sold direct at
Reduced Price*

\$115⁰⁰ F. O. B.
Factory

COMPLETE with all
Attachments as shown



K. R. WILSON
10-14 Lock St., BUFFALO, N. Y., U. S. A.

K. R. Wilson Shop Equipment Sales Co., Los Angeles, California
Export Department: 126 Liberty St., New York City

Inexpensive and Efficient

**Huthier Bros.
Metal Cutting
Saw
Sharpener**



The saw grinding requirements of many plants do not warrant the expense of installing an automatic saw sharpener. These plants will find their sharpening requirements met by the Huthier No. 2 Metal Cutting Saw Sharpener.

An average operator can handle it as fast as an automatic machine. Designed for handling coarse and fine pitch metal cutting saws, inserted tooth and solid milling saws, automatic bevel and straight teeth. Its range, with or without index, is from 6" to 40" diameter. Furnished with or without motor drive.

Huthier Bros. Saw Mfg. Co., Inc.
ROCHESTER, N. Y.

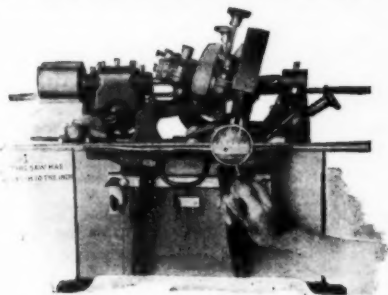
WARDWELL

Hack and

METAL CUTTING

Band Saw

SHARPENERS



**FOR DEMONSTRATION
MAIL 2 SAWS
TO BE RESHARPENED FREE**

Write for Catalog

Representatives in all Principal Cities

THE WARDWELL MFG. CO.

Makers of automatic machines for sharpening—Hack Saws, Hard
Tempered Band Saws, Milling, Slitting and Screw
Slotting Saws and all Woodworking Saws

Manufacturers of the largest line of Saw Fillers made in U. S. A.
108 Hamilton Ave., **Cleveland, Ohio**



Patented

the **WELLS** metal band saw

Incorporating the advantages of a hack saw with the cutting speed and economies of a band saw.

Features:

Self contained and portable if desired—rapid cutting with extreme accuracy—long life blades, low blade expense. A wide range of usefulness—economical operation.

The WELLS SAW cuts soft and hard, ferrous and non-ferrous metals—thick and thin sections—pipe, **tubing**, strips, etc.

No change of blade or speed—cuts high carbon steel then soft brass rapidly and accurately.

Hundreds of duplicate pieces cut with a variation of less than .004".

Saves stock—width of cut less than $\frac{3}{64}$ "—blade .025" thick rigidly supported in six ball bearings.

Durable construction for hard service—strength without excess weight—ball bearing.

A Saw for Production, Maintenance and General Service

We wish you to have descriptive literature—your name and address please—today? Saws will be placed on trial.

Metal Saw Division

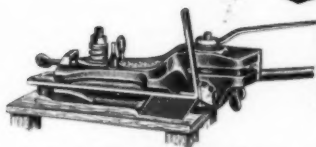
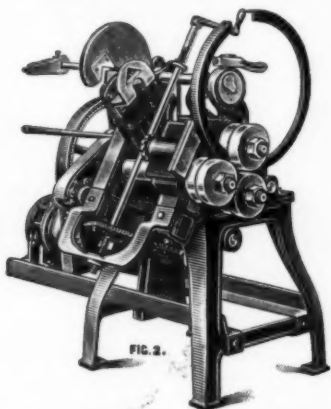
WELLS MANUFACTURING CORP.

Three Rivers, Michigan

Exclusive territory being allotted—representatives and dealers interested, please write.

EXCELSIOR

Circular Angle Bending Machine No. 14



Band and Angle Iron
Forming Machine No. 13



Mfgs. of Shearing and Punching Machines,
Automatic Polishing and Buffing Machines.

Excelsior Tool & Machine Co.
East St. Louis, Illinois

THE BULL DOG

$\frac{1}{2}$ "
Heavy
Duty

\$48



Universal
Current

Let's Send You 16 Reasons
why BULL DOG DRILLS
Are the BEST

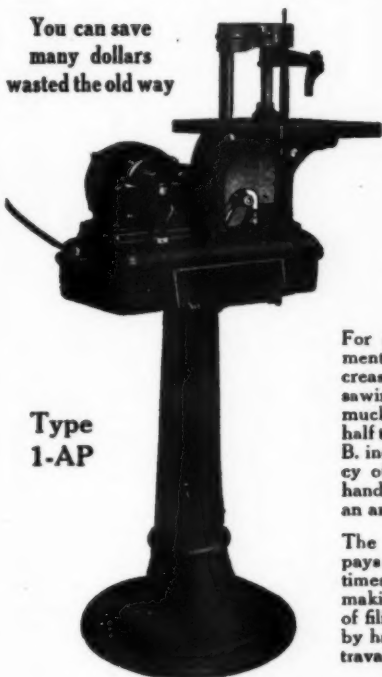
**Week's
FREE Trial**

*If your dealer can't supply you, we'll
gladly send you a biting BULL DOG
Drill for a week's rough-house test.*

National Electric Products Co.
Dept. H. 148 Baxter St., New York, N. Y.

Expensive Hand Filing and Sawing Are Economically Eliminated

**You can save
many dollars
wasted the old way**



**Type
1-AP**

**with a
J. & B.
Filing
and
Sawing
Machine**

For a small investment you can increase your filing and sawing operations as much as two and a half times. The J. & B. increases accuracy of work, in the hands of both veteran and apprentice.

The J. & B. soon pays for itself many times over — thus making the old method of filing and sawing by hand a rank extravagance.

Write for complete details NOW!

LaPorte Machine & Tool Co., Inc.
LaPorte, Indiana



MACHINE TOOL AND GENERAL
PURPOSE PUMP



VOLUME PUMPS



MOTOR DRIVEN UNITS
 $\frac{1}{2}$ to 5 H. P. 5 to 75 G. P. M.

FULFLO delivers coolant in volumes which promote efficiency in cutting tools.

The full, copious flow from the Fulflo is needed to make the best tool, with the best coolant, most effective,

FULFLO does not clog, therefore it always

works. It's the trouble proof pump.

No machines stopped to unclog pump. All the chips you can get into it pass through without harm.

FULFLO has longest life because its only pumping part does not wear.

MANUFACTURED BY

FULFLO SPECIALTIES CO., BLANCHESTER, OHIO

"GUSHER" COOLANT PUMPS

Model B-L

**(Reversible)
Delivers
53 gallons
per minute,
at 400
R. P. M.**

Model TL-O

20 gallons



*Long Lived
Because
They ELIMINATE
Packing Nuts
Foot Valves
Relief Valves
Priming
Friction*

"GUSHERS" are the simplest Coolant Pumps made—free from the troublesome complications as listed above, they give an instant and easy flow without air bubbles and pulsations. Deep grooved ball bearings, automatic oiling and sufficient clearance for passing chips, grit and abrasive matter are some of the other features that aid in maintaining the highest efficiency and long life of these pumps.

The Oil Window of the Model B-L as shown above — enables you to instantly determine the level of the oil in the reservoir, and also shows the return stream from the overflow. Thus you can tell at a glance whether or not the oil is circulating. Also made in a small size—Model T-L—to deliver around 20 gallons per minute.

*Send for the Complete "GUSHER" Catalog listing
the various models with capacities of
from 12 to 75 gallons per minute*

The Ruthman Machinery Co.

528-534 E. Front St.,

Cincinnati, Ohio

THE KELLERFLEX

A Flexible Shaft Machine of a Hundred Uses.

Made in various sizes and types to meet every requirement.

Speeds from 875 to 10,500 R. P. M.

For Snagging, Burring, Lapping, Buffing, Polishing, Sanding, Drilling, Wire-Brushing, etc.

Non-Heating Shaft, Ball Bearing Hand-piece, Ball Bearing Motor, Universal Swivel.

Complete Line of Accessories

Rotary Files, Sanding
Drums, Emery Wheels,
Wire Brushes, Polishers, Etc.

STOCKS AT

Brooklyn
Cleveland
Detroit
Chicago
St. Louis
San Francisco

*Write us today for list of users
in your line of manufacture*

**Keller Mechanical
Engineering Corp.**

KME

58A Washington St.,
BROOKLYN, N. Y.

Builders of the Keller Automatic Die Cutting Machines



**SPEED
SAFETY
ECONOMY
EFFICIENCY**

***All
Combined***

***in this
New***



CUSHION ABRASIVE WHEEL

SPEED and volume of production leap ahead; maintenance and operating costs fall way down with this new Ace of buffing wheels. It is absolutely safe. Its simplicity of operation and sturdiness of construction make it the tool that both the mechanic and the man who purchases want for regular shop equipment—just as soon as they know about it.

WRITE for Amazing Story of Its Structure and Possibilities

This newly perfected Cushion Abrasive Quick-As-Wink Buffing Wheel has antiquated rag buffs. At a high normal speed of 3450 R. P. M., adaptable to either stationary or portable spindles, it cuts thru rust, tool marks or corrosion like a flash of light. Uses patented-clipped abrasive cloth strips of any grade, changeable in 30 seconds. Utilizes complete buffing surface without waste motion or power. No reconditioning necessary. Made in 6" or 8" diameter wheels of 2½" face for any arbor size.

C. B. HUNT & SON

643 McKinley Ave.,

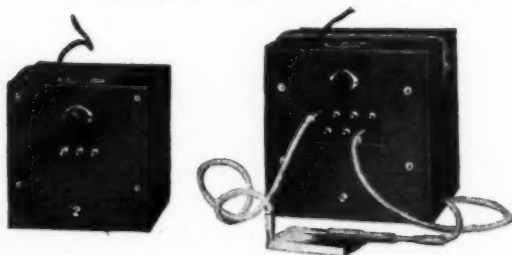
Salem, Ohio

Quick-As-Wink BUFFING WHEEL

The
Etchograph
Trade Mark

Electric Marking Machine

Introducing the JUNIOR ETCHOGRAPH



Junior has all of the features of the ETCHOGRAPH, with only two marking heats where the Etchograph has six. Built to mark Tools, Gauges, Test Pieces. Not for heavy work.

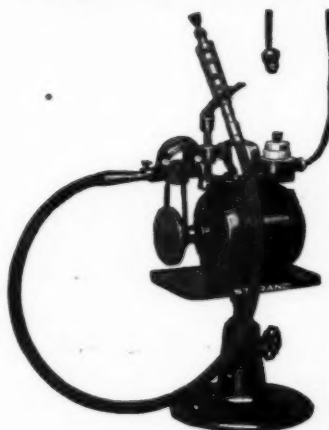
Both machines equipped with pencils having the wonderful "Elkonite" Marking Points, making deeper and clearer lines and outwearing the copper points ten to one.

The first ETCHOGRAPHS, after twelve years service, are still doing their bit without maintenance cost.

Write for prices. giving your current and frequency

William Brewster Company
50 Church Street, New York, N. Y.

Type RF-M4 Machine



Strand

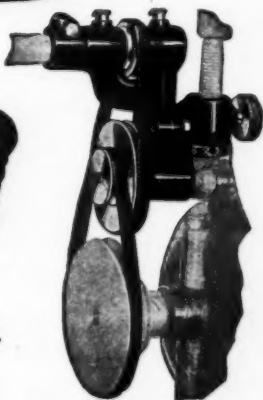
Capacity— $\frac{1}{4}$ H.P.

For

**Rotary Filing
Grinding
And
Polishing**

10,000 R. P. M. Attachment
Furnished Extra
when Required. See
Illustration.

Attachments



N. A. STRAND & CO.

Manufacturers

**5001 No. Lincoln Street
CHICAGO**

PATENT APPLIED FOR



**Portable
Foolproof
Durable**

**Used on
A. C. Light
Current**



*View of Luma Marking
and Demagnetizing hardened
steel tool in same operation.*

Marks hardened steel tools, samples of steel metallurgical specimens, special fixtures, etc. permanently and quickly with department and operation identification.

No Fuss or Muss

Demagnetizes large steel blocks, or small steel tools instantly and thoroughly.

*A Time and Labor Saving Combination well
Worth investigating by any Plant Manager.*

Luma Electric Equipment Co.

Main P. O. Box No. 132

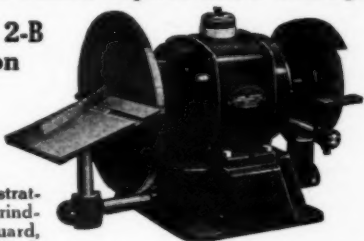
Dept. H.

TOLEDO, OHIO

Winterhoff Portable Electric Grinders

Equipped with Timken Tapered Roller Bearings

**Nos. 2-A & 2-B
Combination
Tool and
Disc
Grinders**



Complete, as illustrated, with 10" x 1" grinding wheel and guard, 12" or 14" disc wheel, tilting table with protractor guard, toggle switch and cord fitted with attachment plug. Repulsion induction motor, $\frac{1}{2}$ or $\frac{3}{4}$ h. p., single phase, a. c. or d. c. Other models include the No. 1-B, an 8" or 10" Portable Grinder; Nos. 3A and 3B Double End Disc Grinders, 12" or 14" disc.

Write for Grinder Catalog, including Low Prices

Portable Electric High Speed Sensitive Bench Drill



No. 0 JUNIOR DRILL
 $10\frac{1}{2}$ " Swing, 0 to $\frac{3}{8}$ " Capacity

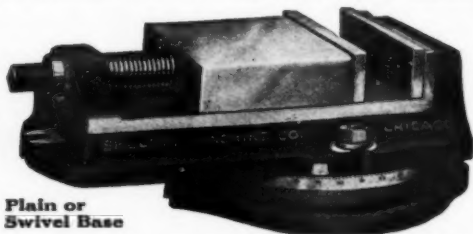
Positively the greatest value ever offered in a machine of this kind. Equipped with $\frac{1}{4}$ h. p. motor, two step cone pulley giving speeds of 1100 and 2200 r. p. m., horizontal drive gives full power to the $1\frac{1}{4}$ " endless belt. Driven cone has bearing support at each end; all parts accurately machined and interchangeable, complete with Jacobs Chuck.

We also make a line of portable, electric Saws and Sanders

Detailed Information Sent Upon Request

Winterhoff Tool & Machine Co.
109 South Elkhart Ave., Elkhart, Ind.

SHELDON MILLING MACHINE VISES



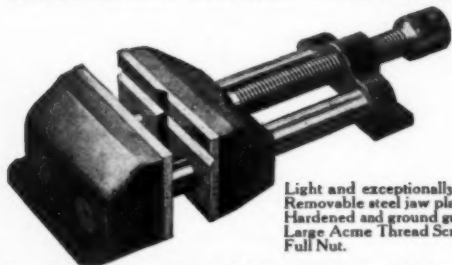
**Plain or
Swivel Base**

The swivel vise is the plain vise with the addition of a circular base, graduated in degrees. It can be removed from the circular base and used as a plain vise if desired.

Specifications and Prices

No.	Width Jaws	Depth Jaws	Jaws Open	Plain Vise		Swivel Vise	
				Weight	Price	Weight	Price
3	3½"	1¾"	2½"	15 lbs.	\$16.00	25 lbs.	\$20.00
4	4½"	1¾"	3½"	30 lbs.	\$20.00	45 lbs.	\$24.00
6	6½"	2"	4½"	70 lbs.	\$30.00	90 lbs.	\$40.00
8	8½"	2½"	6½"	160 lbs.	\$45.00	225 lbs.	\$60.00

SHELDON DRILL PRESS VISE



Light and exceptionally strong.
Removable steel jaw plates.
Hardened and ground guide bars.
Large Acme Thread Screw.
Full Nut.

No.	Width of Jaws	Depth of Jaws	Jaws Open	Weight	Price
D-4	4½"	1½"	4"	15 lbs.	\$12.00
D-6	6½"	1½"	6"	35 lbs.	\$18.00
D-9	9"	2½"	9"	70 lbs.	\$24.00

SHELDON MACHINE CO. 3250 Cottage Grove Ave., CHICAGO, ILLINOIS



**Bench
Type "C"**

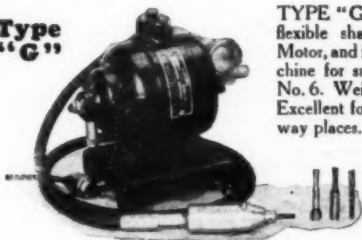
VIM TOOLS

**Portable
Electric
Versatile**

**for
Screw Driving
Nut Setting**

The VIM Bench Machine Type "C" for screw driving and nut setting is operated by a foot pedal, leaving both hands free for adjusting work in hand. It is especially designed for female help. Throat or clearance of work is 6". Screws and nuts can be driven at high speed—2000 R. P. M. bit speed—if desired.

**Type
"G"**



TYPE "G" VIM Tool has flexible shaft with Universal Motor, and is a very handy machine for small screws up to No. 6. Weighs only 12 ounces. Excellent for use in out-of-the-way places.

NOTE: In all types, the bit does not operate until applied to work

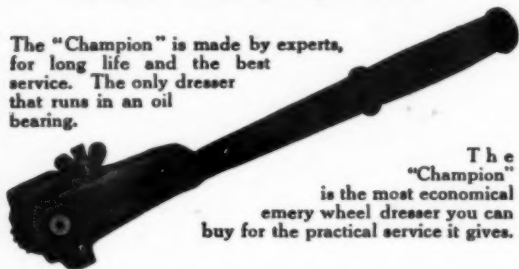
*We have other types to suit your conditions.
Send for Bulletins and Prices.*

Vim Electric Tool Company
149 Broadway, New York City

"Champion" Emery Wheel Dresser

Outlasts a Dozen Cheaper Dressers

The "Champion" is made by experts, for long life and the best service. The only dresser that runs in an oil bearing.



The "Champion" is the most economical emery wheel dresser you can buy for the practical service it gives.

The *cutters* are made of a special steel, heat-treated and tempered by a special process.

The *sleeve*, furnished with each set of cutters, revolves on the spindle and the cutters in turn revolve on it, providing a more perfect bearing for the cutter wheels.

The patented *spindle bearing*, which is made of steel and thoroughly hardened, serves as a bearing for spindle and a guide for cutting wheels, and it cannot turn in the handle; makes wobbling impossible.

The patented *handle* is heavy and strong, designed for long service, efficiency and economy.

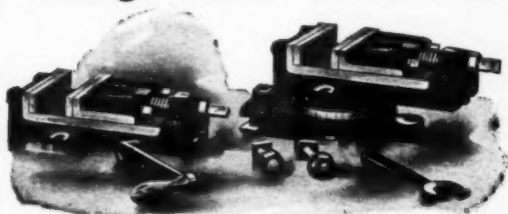
The patented *handle cap* eliminates the old-fashioned set screw and serves as an upper-clamp for spindle bearing. Further, there are no moving parts. On account of absence of wear, the life of handle and handle cap is indefinite.

Our Catalog also describes

Champion Tool Holders, Champion Expanding Mandrels, Machinists' Vises and Clamps, etc., and our large line of practical, hard-to-beat Shop Furniture. Copy upon request.

The Western Tool & Mfg. Co.
SPRINGFIELD, OHIO

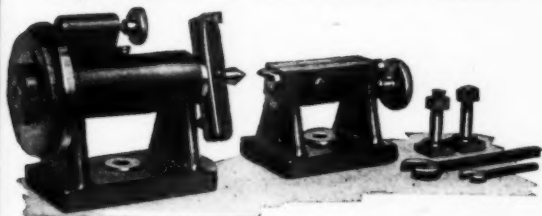
"Straight Line" Milling Machine Vises



**Swivels 180° Either in a Horizontal or Vertical Plane.
STRONG — DURABLE — ACCURATE
Made in Four Sizes**

Ordered repeatedly by leading machine tool users for accurate heavy duty milling. Interchangeable parts.

Adjustable Dial Index Center



- * With work dogged between centers, and latch pin in, the dial can be turned to bring work in position where wanted as to relation with machine cutter or emery wheel, then bound to start indexing from such setting. Regular dial is drilled for three and four stations. Can be used for re-cutting or grinding flutes in taps and reamers or teeth in cutters.

Also Manufacturers Of

Double end horizontal drills, milling machines and attachments, dividing heads, index centers, single and multiple spindle, hand screw machines, cutter grinders, screw sloters, hand lathes, collet chucks, oval chucks, rotary tables, hex-square milling fixtures.

WRITE FOR CATALOG

JOHN B. STEVENS INC.

25 Cleveland Place,

NEW YORK CITY

Counterbore Cutters and Holders



All Bicknell-Thomas Counterbore, Core Drill and Flue Sheet Cutters are forged and twisted while hot, increasing original strength and density of our High Speed Steel, resulting in tools unexcelled for cutting efficiency with increased number of cuts per grind. Decided advantages of the Cutters are the shearing cut—powerful drive—less re-sharpening.

Write for Illustrated Catalog

BICKNELL-THOMAS CO., **Greenfield, Mass.**

Nicholson Expanding Mandrels



THEY are not a new tool. If you order a set or a single mandrel you will know you are getting a practical and efficient article that has coped with all sorts of jobs where mandrels have been required, in all kinds and classes of machine shops, during the past 30 years.

Write Us for Further Information

W. H. Nicholson & Co.
117 Oregon St., Wilkes-Barre, Pa.

Scratch Awl & Drift Pin



Drop Forged—Alloy Steel—Hardened

No. 5. Jr. Punch



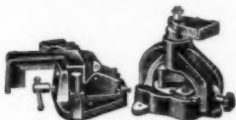
Capacity $\frac{1}{4}$ " thru 16 gage
Weight 2½ lbs.

No. 0. Solid Set



Made from High Grade
Tool Steel

No. 50 Angle Iron Mitre Notcher and No. 51 Angle Iron Bender



Capacity will shear Mitre in
 $2" \times 2" \times \frac{1}{4}"$ Angle Iron.

Weight of Mitre Notcher 55 lbs.
Weight of Mitre Notcher Bender 43 lbs

No. 16. Roller Bearing Punch



Operator works
in front of
machine.

Can be
furnished
with or
without
work table

Capacity $\frac{3}{8}$ " thru $\frac{1}{4}"$

Hollow Punch Set



Self Centering Locating Spring Point.
Made in 3 sizes.

No. 6 Slitting Shear



Roller Bearing
Cap. $\frac{3}{16}"$ Thickness, Throatless
Drop Forged

Write for Catalog on Entire Line

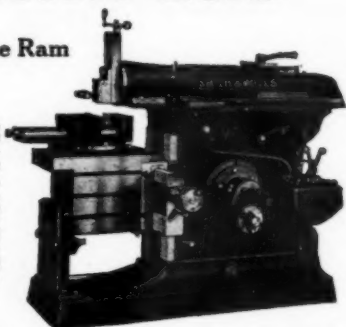
WHITNEY METAL TOOL CO.

95 Forbes St., Rockford, Ill.

SHAPERS

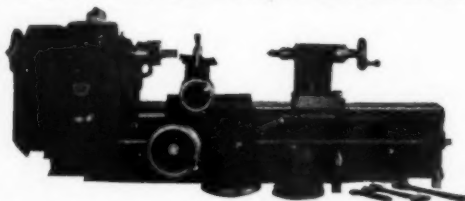
"V" Type Ram

12", 14", 16",
20", 25" Gear
Box single pul-
ley or motor
drive, also 16",
20", 25" B. G.
cone drive with
belt shifter. 32"
B. G. all geared
single pulley or
motor drive, all
sizes crank type.



The Smith & Mills Co., Cincinnati, O., U.S.A.

9" A. V. Carroll Geared Head Lathe



A 9" Geared Head Lathe for manufacturing plants, tool rooms, industrial plants, schools, service stations, homes and jobbing shops.

All steel gears, three changes in head and gear box. $\frac{1}{4}$ H. P. motor direct connected. Cuts right or left hand threads. Furnished also with three step cone belt drive.

Circular on request

A. V. Carroll Machine Tool Co.
Norwood, Cincinnati, Ohio

12 SPINDLE SPEEDS

Chrome Nickel Steel Gears



**C. & J. 15/16-inch
Geared Head
Motor Drive Lathe**

ASK FOR FURTHER DETAILS

**Carroll & Jamieson Machine Tool Co.
Batavia, Ohio**

The NEW HAMILTON



LATHES

are unsurpassed for strength and accuracy. Most convenient heavy duty quick change gear lathes for production and tool room use. Single and double back gear with cone drive. Geared head with belt and motor drive.

Sizes 16'-18'-20'-22' and 24'

Send for new catalogue bulletin

The Hamilton Tool Co., Hamilton, Ohio

Special Machinery Builders

Our many years of experience in specialized machinery building has placed us in a recognized class.

Your special machinery requirements should be analyzed by expert engineers.

We can design your machines or work according to your specifications.

Also Dies, Jigs and Fixtures

Jarecki Machine & Tool Co.
Dept.B Grand Rapids, Mich.

MIKRON



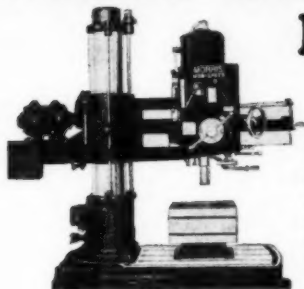
**AUTOMATIC
SMALL PRECISION**

**Gear Hobbers
Gear Cutters
Pinion Hobbers
Thread Millers
Hob Grinders**

Catalogs On Request

Triplex Machine Tool Corp.
50 Church St., New York City

Morris Mor-Speed Radials



**Built in
9-11-13'**

Column Diameters

This is the last word in Radial Drill Design. Timken Bearing equipped. All speed and feed changes located in the head. Many other features.

Write for Catalog

The Morris Machine Tool Co.
CINCINNATI, OHIO

Represented by The Pratt & Whitney Co. Sales Agencies

Before You Buy A Super-Quality Chard

**We Want You to Be Satisfied that
the Super-Quality Really is there**



**18-Inch with
Quick Change Gears**

Made also with Twelve Speeds
Motor or Single Pulley Drive

That is why we ask the privilege of telling you the story of its construction—of showing you what Super-Quality means, and how we build it into every lathe that bears the Chard name plate. *Write for Details.*

Chard Lathe Company, NEWCASTLE, INDIANA

GEARS

In Stock—Immediate Delivery



Gears, speed reducers, sprockets, thrust bearings, flexible couplings, pulleys, etc. A complete line is carried in our Chicago stock. Can also quote on special gears of any kind. Send us your blue prints and inquiries.

Write for Catalog No. 70

CHICAGO GEAR WORKS

769-773 W. Jackson Blvd.,

CHICAGO, ILL.

STANDARDIZATION PAYS

Universal Joints

Steel and Bronze



*Send for Circular giving specifications
and prices on complete line*

Boston Gear Works Sales Co.

North Quincy, Mass.

BOSTON NEW YORK PHILADELPHIA CLEVELAND CHICAGO

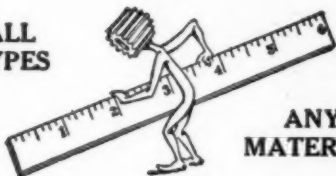
BOSTON GEARS

Mass.



Gears

ALL
TYPES



ANY
MATERIAL

Medium and Small Size Gears

MASSACHUSETTS GEAR & TOOL CO.

36 Nashua St., Woburn, Mass.

To Solve Your Gear Problems

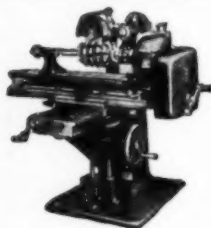


*Information clearly set forth
to answer your gear problems
—your speed reduction prob-
lems, and general power trans-
mission questions. Complete
with prices.*

Write for This Free Book

661 FOOTE BROS.
Pages GEAR & MACHINE CO.
Dept. 34, 111 No. Canal St., Chicago

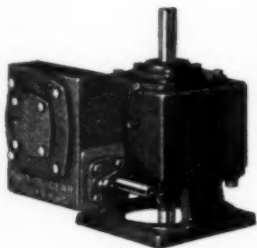
Automatic Toolroom Grinder



for correct sharpening of hobs, cutters, reamers, taps,—straight or spiral fluted—at enormous saving in time, as it indexes automatically from gash to gash.

Write for circular.

GEORGE SCHERR CO., 142 W. Liberty St., NEW YORK



DOUBLE SPEED REDUCERS

Reductions
up to 24,000 to 1

Catalogue 29A.

THE OHIO GEAR COMPANY

1331 East 179th Street - Cleveland, Ohio

All the grinding and polishing on one Machine



The Porter-Cable Belt Grinder sees the whole job through. It's 2 machines in one—vertical to horizontal or vice-versa in less than 5 minutes. It rapidly grinds and polishes medium sized parts requiring straight grain finish—cutlery, tools, dies, stampings, hardware, die castings and a countless variety of fussy work. Easily moved to woodworking departments for finishing cabinets, boxes, patterns and similar sanding jobs. Consider these advantages—the clear cut economies! Send for data on this and other Porter-Cable Grinders—belt, disc and spindle.

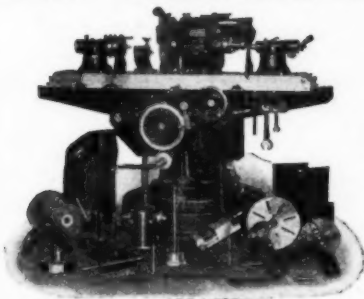
The Porter-Cable Machine Co.

Machine Tool Builders for 23 Years
Salina St., Syracuse, N. Y.

PORTER-CABLE
MACHINE CO
SYRACUSE, N.Y.



SIX Grinders In ONE



12'x36' Thompson Universal Grinder

Does every grinding operation required in the machine shop. Lowest cost work for plain, surface, die, cutter, edge and internal grinding. Equipped with the new auxilliary coarse cross feed for surface grinding.

Let us send you the Illustrated Booklet today!

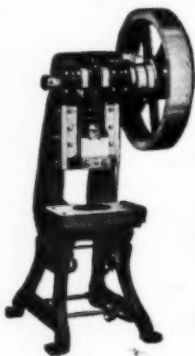
The Thompson Grinder Company

1534 West Main St.,

1-1

Springfield, Ohio

The Spirit Of the Times



is reflected in the speed and stamina of Rockford High Duty Punch Presses.

They are built to produce and maintain Hi-Production—and they do it.

Wide range of sizes and types.

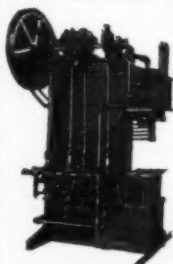
Write today for new catalog

Rockford Iron Works
Rockford, Ill.

Hydraulic Pressure To Meet Your Specific Need

No matter what your need—whether for straightening, drifting, forming, broaching, etc., Lourie Presses can serve you in any capacity.

Perhaps you are encountering difficulty in forcing that can be accomplished more soundly and economically by hydraulic pressure. New uses for the Lourie Press are being found daily!



Steel Plate Construction

Our Engineering Dep't. welcomes the opportunity to suggest methods of applying hydraulic pressure. Ask for Bulletin 1301-2.

LOURIE MFG. CO., 565 W. Washington Blvd., CHICAGO



Atlas Arbor Presses

For All Forcing Operations

Illustration shows our No. 55 Power Drive Press, which is adaptable for fast production work and capable of supplying ten tons pressure.

*Write for our Bulletin—
showing 30 different sizes*

Atlas Press Co.

*Department B,
Kalamazoo, Michigan*

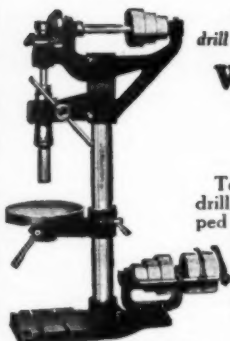
Fall River Screw Press



Here is a new screw press which is large enough and strong enough to take care of every job that comes into the average shop. It is built of high grade steel throughout, with special attention given to those parts subject to the hardest strain. 42 inches wide and table is 8 inches. Capable of exerting over 65 tons pressure.

Write for further information

Fall River Grinding & Machine Co.
JESSE ST., FALL RIVER, MASS.



10" SUPERIOR Type: "M"

"If it's to be drilled:
drill it the "SUPERIOR" way"

What Does It Mean To You?

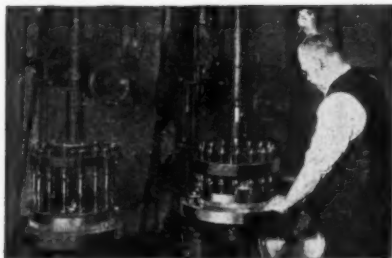
To know that your small
drilling equipment is equip-
ped thruout with hi-grade
Bronze bushed bear-
ings; thus assuring you
of *un-interrupted*
PRODUCTION which
means greater profit.

May we send our catalog?

Superior Machine Tool Co.
Kokomo, INDIANA

SINCE
1902

DORMAN 16-Spindle Drill Head



and
Tapper
14-31-32"
Centers

Drill Head has No. 1 Morse taper in spindles and ball thrust; Tapper has automatic reverse, 5/16-24 taps tapping $\frac{3}{8}$ " deep in tough cast iron. 500 pieces can be drilled and tapped and head changed in a few minutes without lost time for adjusting, and accuracy is always maintained. Housings of tough aluminum.

Send Blue Prints or Layout for Quotation

**JOHN H. DORMAN, 5148-52 Hudson Blvd. W.,
WEST NEW YORK, N. J.**

BURKE

Handy Light Millers

The use of light instead of heavy milling machines on a large number of jobs brings greater production and big savings in power. Keep the big millers on the heavy work for which they are intended by installing one of these efficient Burke Machines for the light jobs. The cost, as shown, is very small; they are exceptionally fast, accurate and dependable, and the majority of users soon discover them to be among the busiest and most profitable tools in their shops.



No. 3,
\$155

WRITE US FOR CIRCULARS

The Burke Machine Tool Co.
297 E. 16th St., Conneaut, Ohio, U. S. A.

"Buffalo"



ANNOUNCES

THE NEW

14" Sliding Head Hi-Speed

DRILLS

Floor or Bench Type

Drills to center of 14" circle. Can be arranged in multiples. Sliding Head has a vertical adjustment of 7¼ inches, spindle travel of 3½ inches.

Made for either motor or pulley drive. Equipped throughout with high grade ball bearings.

Circular 2690 gives full details

Buffalo Forge Co.

161 Mortimer St., Buffalo, N. Y.

In Canada: Canadian Blower & Forge Co.,
Ltd., Kitchener, Ont.



A BIG Saving— In Your Drilling Costs

A U.S. Multiple Spindle Drill Head transforms a single-spindle drill into a multiple spindle.

YOU CAN drill two or more holes with the same speeds and feeds you use for drilling one.

Special Heads Made to Order

THEY ALL have patented double adjustment, which permits drilling in any pattern. *Writing us incurs no obligation.*

The United States Drill Head Co., 1952 W. Sixth St., CINCINNATI, O.

Michigan Agents—National Sales Engineering Corp., Detroit, Mich.

The U. S. —

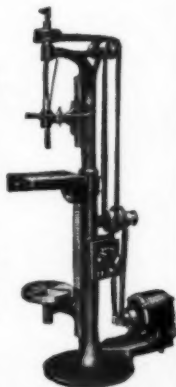
A Complete Motor-Driven
14" Sensitive Floor Drill

Price with motor,
switch and belts. **\$115**

Or with Counter-
shaft for Belt Drive **\$70**

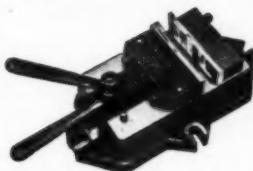
Nothing Better for the quick and accurate drilling of holes $\frac{1}{4}$ " and smaller. Steel spindle, ground to size, with ball thrust bearing; vertical adjustment to head; tables for long and short work; three speeds, etc. Send us your order, or ask for more data.

The U. S. Machine Tool Co.
1952 W. 6th St., Cincinnati, Ohio



Speed — Power — Strength — Accuracy

Hartford Milling Vise



Jaw width 5"
 Jaw depth 1¼"
 Maximum opening 3½"
 Weight..... 40 lbs.

Also made in the swivel-jaw type with hard or soft jaws, maximum opening 2¼".

In point of service the Hartford is unusual. Its specialized design includes a lower cam-faced handle that insures speedy opening and return, and a top eccentric lever handle that gives tremendous binding power. The steel parts are drop forged, hardened and ground—base is made of special iron. The Hartford will stand up under every demand that may be made upon it.

Send for descriptive catalog illustrating its usefulness

We also Build Machinery on a Contract Basis and Design and Develop Special Automatic Machinery—Gears Cut to Order.

Hartford Special Machinery Co., 285 Homestead Ave., HARTFORD, CONN.



**For Easy Handling
 Speed and Precision**

DETROIT

**Semi-Automatic
 Five Spindle**

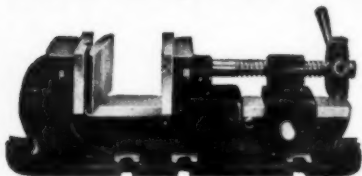
DRILLING MACHINE

Designed for highest efficiency, the Detroit drills from 900 to 1200 holes per hour—as fast as the operator can feed it stock. Fixtures are easily operated, a pull on the lever locks or unlocks them instantly. For speed, accuracy, simplicity and low cost of operation the Detroit cannot be equaled. Capacity, No. 60 to ¾" drills.

Write for Illustrated Folder

Detroit Machine Tool Co.
 5061 Woodward Ave., **Detroit, Mich.**

'Most Efficient Vise Made'



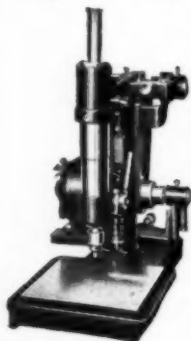
**GEM
Drill
Press
Vise**

THAT will also be your verdict when you know its power, capacity, adaptability and lightning speed of setting. Designed by a mechanic for mechanics. The independent swivel jaw holds taper and irregular work with a bull-dog grip. The Gem saves time in shop and factory. The folder shows its use in drilling and milling operations.

Glad to mail you a copy

J. E. Martin Tool & Die Works, 528 W. State St.
Springfield, O.

Sigourney Sensitive Drills



The Quality Tools That Reduce Costs

SIGOURNEY DRILLS are designed for those who realize that the best tools pay the largest returns on the investment.

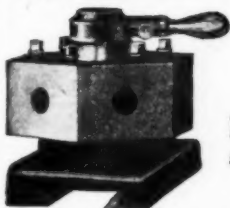
Made with one to four spindles, plain or ball bearing, belt or motor drive. *All parts interchangeable.*

The illustration shows our motor-driven, all-ball-bearing No. 0 High Speed Bench Drill which may be operated up to **10,000 R.P.M.**

*Full data and prices
sent you on request.*

Sigourney Tool Co.
Hartford, Conn., U.S.A.

STANDARDIZED LATHE TURRETS



8 Styles

12 Sizes

**For any make or
size of Lathe old
or new.**

STYLE "O"

Hexagon head, for round shank
tools and bolted on fixtures.

Ask for Circular No. 18

FAY & SCOTT
DEXTER, MAINE

E-Z THREAD DIAL

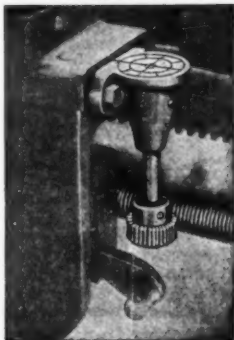
Thread cut-
ting on engine
lathes made
easy, and at
lower cost.

Made in
four sizes.

Can be easily
attached to
all size lathes.

A reliable
device that
will aid the
operator in
the work of
cutting
threads.

With it
threads can be
cut close up
to shoulders
as easily as
the ordinary
thread.



Eliminates
stopping or re-
versing the lathe.

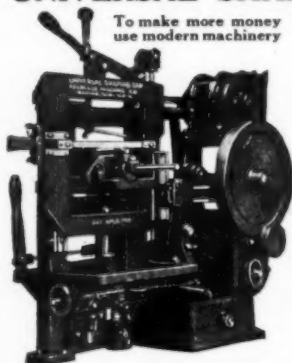
The many
repeat orders
received
prove it is
satisfactory
after trial.

Can be
shipped
within
two days
after receipt
of order.

Sent on thirty
days' trial.
Send for latest
folder today.

**JAMES M. COLVEN, 20 Wolfe Street,
Yonkers, N. Y.**

-PEERLESS- UNIVERSAL SHAPING SAW



To make more money
use modern machinery

Different Principles
Greater Efficiency
Give The Most Of—
Speed
Accuracy
Blade Economy

SIZES:

6"x6"--9"x9"--13"x13"

PEERLESS

HIGH SPEED HACK-SAWS

6"x6" 9"x9" 13"x16"

Sturdy--Efficient--Reliable

Peerless Machine Co.

1218 Sixteenth St.

Racine, Wisconsin

Write for Details

"Saved Its Cost the First Month"



That was the interesting—and
profitable—experience of one of
the users of the

**"CANTON" Portable
Crane, Hoist and Truck**

"The Portable Floor Crane has
proven the best investment we
ever made. We believe we saved
its cost the first month we used it.
Our big saving has been in the
handling of our heavy die blocks
in our machine shop, as one of
our helpers can now with ease do
the work of 6 to 8 men."

*Write for Interesting Booklet
showing the several sizes*

Canton Foundry & Machine Co.
CANTON, OHIO

New York Office: 101 West 31st Street



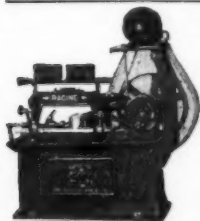
VICTOR High Speed Steel Hack Saw Blades

In these modern times the hack saw still holds its place as one of the most important factors in metal cutting.

Modern developments in metallurgy have made possible the High Speed Hack Saw Blade. VICTOR HIGH SPEED HACK SAW BLADES are the latest development of a perfected hack saw that is more than capable of answering all the modern cutting requirements and needs. Faster cutting and longer life proves that these blades are more economical.

A trial will convince you

VICTOR SAW WORKS, Inc., Middletown, N. Y.



High Speed 6 in. x 6 in. Machine
Silent Chain Motor Drive
Other Machines 4 in. to 12 in. esp.

Racine Saws are Preferred

A list of users of Racine Metal Cutting Machines would read like a "Who's Who" of American industry.

This preference for Racine Equipment is the result of sheer performance established by twenty years experience with metal cutting. There is a Racine Machine for every metal cutting job.

Write

Racine Tool & Machine Co.

1429 Junction Ave., Racine, Wis.

RACINE

**HIGH-SPEED
METAL CUTTING MACHINES**

BIG BOY

Keyseater

Has been made for a
7½" diam. hole to mill
a Keyseat 2½" wide, 1"
deep, 13½" long.

All done in a radial
CATALOG O

National Machine Tool Co.

2268 Spring Grove Ave.,

Cincinnati, O.



Keyseats Right On the Spot

No Dismantling—No Fuss



**The BURR
Portable
Keyseater**

Cuts keyways
up to 12" long,
in shafts up to 5"
diam., anywhere,
in any position.

Have one on
hand for your
next emergency—the cost is often saved on a single job. The
seven sizes are *quick* and *accurate*. Hand or power driven.
Over 10,000 in use. *Order yours today and save money!*

JOHN T. BURR & SON

422 Kent Ave., Brooklyn, N. Y.

PEERLESS

For Flat
Work

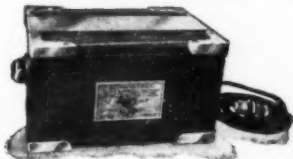


8 Sizes

Write for Circular

PEERLESS SURFACING MACHINE CO., Inc.
TROY, N. Y.

J. & H. Demagnetizer (for Alternating Current)



NEW UNIPOLE TYPE — HEAVY DUTY

Designed to remove all traces of residual magnetism from work finished on magnetic chucks.

Supplied for either 110 or 220 volt current.

Requires no counter-shafts, belts or intricate electrical connections. Simply plug into lamp socket or receptacle.

Size 12" long, 9" deep, 6" high. Weight 35 lbs. Attractive switch cover plate contains complete instructions for operating.

Sold on one week's trial.

J. & H. Electric Co., 200 Richmond St.,
Providence, R. I.



Die Making Machines

save an average of 50%

Dies, templates, experimental parts, gages and the like can be sawed, filed and lapped on the Oliver of Adrian Die Making Machine much easier, more accurately and in a fraction of the time ordinarily required for handwork.

We also manufacture a line of

Point Thinners.

Drillpointers.

Cutter Grinders



Send


for

Bulletins

Oliver Instrument Company, 1408 Maumee St.,
ADRIAN, MICH.

DANLY DIES SETS

Immediate delivery
from stock, standardized,
interchangeable die sets—a
type and size for every need.
Special die sets built to speci-
fications or designed to
meet requirements. Send
for Danly Catalogue—
The Manual of the Met-
al Stamping Industry,
used by over 15,000 de-
signers, etc.



DANLY
STANDARD

Danly Machine Specialties, Inc.
2116 S. 52nd Avenue, Chicago

Detroit, Mich., 1549 Temple Ave.
Cleveland Ohio, 1444 E. 49th St.

Long Island City, N. Y., 36-12 34th St.
Rochester, N. Y., 16 Commercial St.

Reduce Waste and Spoilage

With the New

"Autex" Extension Reel

PATENTED
Jan. 30, 1917



Type 6
MODEL 1129

The "Autex" follows the trained hands of the workmen enabling them to turn out more and better work. If the workmen can not see well, they can not maintain high speed production and avoid excess waste of material. Accidents are reduced to the minimum and in many ways the "Autex" pays for itself many times over.

Approved by the Underwriters

Equipped with Swivel Joint and Rubber Cord

Write for descriptive circular

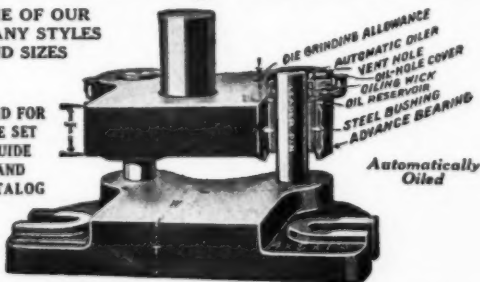


The Cincinnati Specialty Mfg. Co., Inc.
1903 Powers St., Cincinnati, Ohio

Automatically Oiled Die Sets

ONE OF OUR
MANY STYLES
AND SIZES

SEND FOR
DIE SET
GUIDE
AND
CATALOG



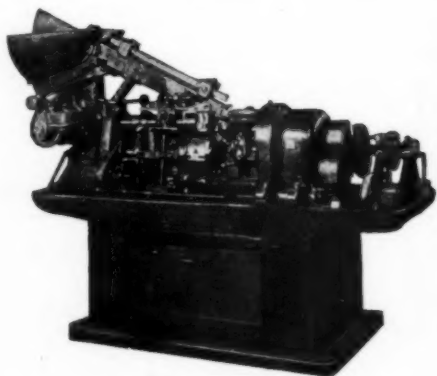
E. A. BAUMBACH MFG. CO.

GENERAL OFFICE AND WORKS

1810 South Kilbourn Ave., CHICAGO, ILLINOIS

Sales and Engineering Offices—Principal Cities U. S. A. and Canada

Combined Automatic Pointing and Threading Machines



For Bolts and Cap Screws
Capacity— $3/16$ " x 1" Diameter
1" to 6" Long

Write for Full

THE ECONOMY ENGINEERING

Automatic Shaving Machines

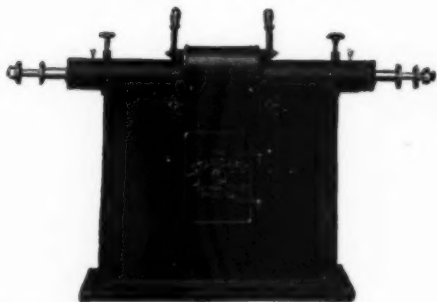


Shaves top and underneath
head of Cap Screws
Capacity $\frac{1}{4}$ " x $\frac{3}{4}$ " Diameter
 $\frac{3}{4}$ " to $5\frac{1}{2}$ " Long

Information

COMPANY, - Willoughby, Ohio

STANDARD
RIGHT
SPEED TWO MOTOR
BALL BEARING
BUFFER
AND
POLISHER



Embraces features like

2 40° G. E. motors with independent Push Button Controls.
4 SKF ball bearings. Dayton cog belt drive.
Spindles with hand brake and locking device for changing wheels.

Made in 3, 5 & 7½ H. P. Sizes

Bulletin describing mechanical features and specifications on request.

The Standard Electrical Tool Co.

Established 1912

1938 W. 8th St.,

Cincinnati, Ohio



Drilling Cost Cut 76%

A MIDWEST lamp manufacturer, using carbon drills, was confronted with the problem of reducing hole production cost and speeding up hole production.

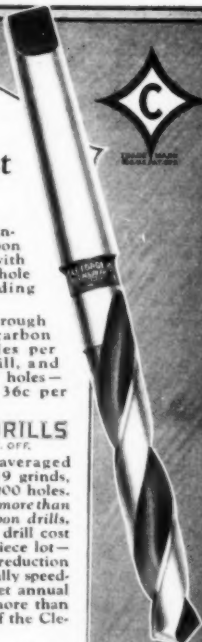
On a certain job, run through in 10,000-piece lots, carbon drills averaged 780 holes per grind, 24 grinds per drill, and total drill life of 20,000 holes—with direct drill cost of 36¢ per 10,000 piece lot.

CLE-Forge HIGH SPEED DRILLS

TRADE MARK REG. U.S. PAT. OFF.

were then tried. They averaged 10,000 holes per grind, 19 grinds, and total drill life of 200,000 holes. Although costing, per drill, more than twice as much as the carbon drills, Cle-Forge showed a direct drill cost of only 8½¢ per 10,000 piece lot—demonstrating a net cost reduction of over 76%, while materially speeding up production. The net annual saving was \$381.06—or more than 2½ times the actual cost of the Cle-Forge Drills used!

*This complete story is told
in Digest No. 59. Shall
we send you a copy—
without obligation?*



The

CLEVELAND

TRADE MARK REG. U.S. PAT. OFF. AND FOREIGN COUNTRIES

**TWIST DRILL
COMPANY
CLEVELAND
NEW YORK CHICAGO LONDON
SAN FRANCISCO**



The LE B Tool Room

Convenience, rigidity and ease of control are all inherent characteristics of this lathe which possesses in full the accuracy and precision demanded of a tool room lathe.

LE BLOND
MACHINE TOOL DIVISION

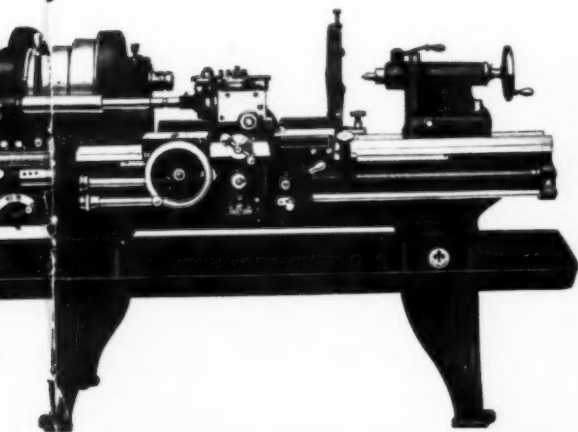
THE L. F. LITTLE MACHINE TOOL CO.
CINCINNATI, OHIO, U.S.A.

Builders of Lathes, Cutter Grinders,
Milling Machines, Aircraft Engines,
Electrical Tools



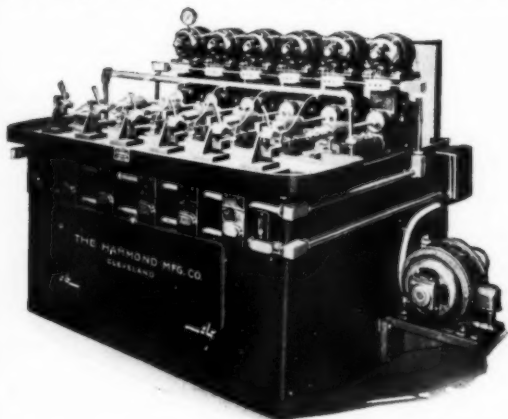
E BLOND *om Lathe*

COMPLETELY DESCRIPTIVE
LITERATURE WILL BE
SENT ON REQUEST . . .



HAMMOND

Six Spindle Hydraulic Feed, Deep Hole Drilling Machine



Capacity, $\frac{3}{8}$ " Drill, 6" Deep In Steel

Write for Full Information

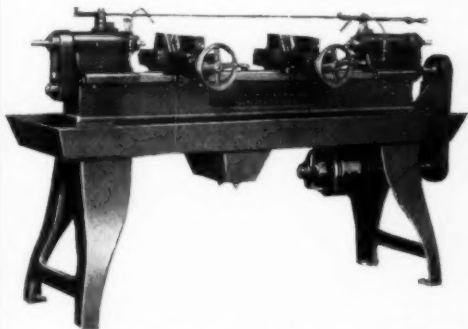
The Hammond Mfg. Co.

7808 Kinsman Road,

Cleveland, Ohio

SUNDSTRAND

Double End Centering Machine



One Of The Hits of The Cleveland Show

For centering both ends of a shaft simultaneously. Spindles operate together or independently. Left hand head is removable for long shafts.

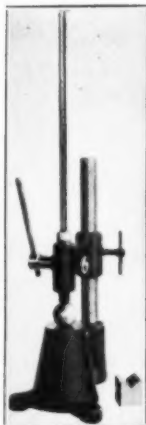
Sundstrand Centering Machines are regularly furnished in a range of sizes with one or two spindle heads. Belt or motor drive. Also a complete line of Bench Centers. Special fixtures furnished when desired.

A surprisingly large variety of work can be accommodated on these machines.

Send for Bulletin No. 10H.

Sundstrand Machine Tool Co.

Lathes—Milling Machines—Centering Machines—Balancing Tools
2510 Eleventh St., Rockford, Ill., U. S. A.



Arnold Hardness Tester

**A Portable Machine of Rugged Construction
for Reliable and Speedy Testing over a
Wide Range of Work**

Without complicated or delicate mechanism, it is always ready for instant use.

Upkeep costs negligible. The ball is the only part subject to wear, and it can be changed in a fraction of a minute at a cost of less than one cent.

Measures hardness of raw materials in the stock room as well as finished parts, in the hands of the ordinary workman. Furnished with anvils for rounds, flats, irregular shapes and curved work.

*Worth more to you than its moderate cost
Write for more complete information*

H. H. ARNOLD CO., Inc., Rockland, Mass.



STANDARD Dial Indicator Excels in Service!

The patented "gear cover" of the STANDARD Dial Indicator gives the mechanism double protection from dust, grit and moisture—insuring *smooth action, accuracy and long life*. The large figures on the dial, free of shadows and with distinct graduations make easy reading.

*Catalog and Price Lists of the
entire STANDARD line gladly
sent at your request.*

STANDARD GAGE COMPANY, INC.
Poughkeepsie, N. Y.

DETROIT

CLEVELAND

DAYTON

CHICAGO



Ames Gauges for accuracy

Micrometer Dial Gauges
in a wide variety of dial
markings to fit all re-
quirements.

Upright Dial Gauges
with mountings for
testing parts speedily.

B. C. Ames Co.
Waltham, Mass.
982 Stephenson Bldg., Detroit



FEDERAL POCKET THICKNESS GAUGE

Model 20

For measuring all flat ma-
terial, such as sheet metal,
hack saws, wire, leather,
rubber, webbing, fabric,
paper, cardboard, cellu-
loid, etc. Weighs only
5 oz. and is $\frac{1}{2}$ " thick.
Range .200".

Write for Complete Catalog of
all FEDERAL Models

Federal Products Corporation
PROVIDENCE, R. I.

Western Branch: 7338 Woodward Ave., Detroit, Mich.

The HANDNIB for Tool and Die Work

Inside Nibbling, Out-
side Nibbling, Drill rod
cutting without distor-
tion, and accurate
Shearing, are the
features of our various
Handnib tools.

*May we send you
a folder ?*



National Machine Tool Co.
1536B Clark St., Racine, Wis.



ARMSTRONG

TRADE MARK REG. IN U.S. PAT. OFFICE

Off-Set
Spring Cutting-Off Tool



makes cutting-off in a lathe easy. Goose-neck form gives resiliency that takes up chatter and prevents work from climbing up on the tool—the cause of cutting-off tool breakage. Sets to any clearance. Blades easily ground from stock shapes of High Speed Steel. Write for Catalog T-27.

ARMSTRONG BROS. TOOL CO.

"The Tool Holder People"

308 N. Francisco Ave., Chicago, U.S.A.

Made in 6 Sizes for Balancing Anything That Revolves up to 24000 lbs.



Anderson Improved Balancing Ways

Require no leveling or adjustment. They are especially sensitive! Spindles and discs are hardened like the frame—they cannot lose their effectiveness or become injured by use.

"Swing"	20"	40"	60"	72"	96"	72"
Greatest distance bet. standards	20"	30"	30"	66"	88"	20'
Capacity in lbs.	1000	2000	2000	5000	10000	24000
Approx. shipping weight	45	90	150	350	650	
Code	Bend	Bid	Bia	Bib	Bes	

Any of above can be furnished with longer shafts

Anderson Bros. Mfg. Co.
1915 Kishwaukee St., Rockford, Ill.

The Springfield Straightening Press

"The Acme
of
Convenience"



Made in
3 Sizes

Invaluable
in the
tool room,
also for
straightening
crank and
cam shafts
and other
automobile
parts.

A GREAT LABOR SAVER, as you will find the arrangement of this Press makes it the very *acme of convenience*. Any work within the range of centers may be tested and straightened without unnecessary walking from press to lathe each time in straightening rough or finished work. Any length, however, may be operated upon. Of "Springfield Quality" thruout.

Write for folder illustrating many of its uses

The Springfield Machine Tool Company
633 West Southern Avenue, SPRINGFIELD, OHIO
We also manufacture Engine Lathes and Shapers

BRIDGEBILT CHAIRS



Test This New Production **CHAIR** At Our Risk

Here's a chair sold strictly on its merits. You can't appreciate its splendid usefulness and low cost until you see, test and compare it in your own plant. Just try one for strength, comfort and the same general wear and tear uses you would expect of such a product. We stand or fall by your decision.

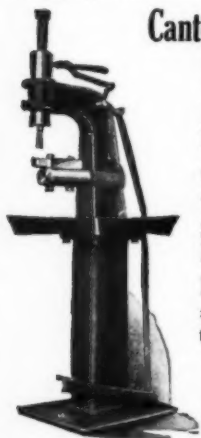
*Send coupon TODAY. Mark it and mail direct.
We ship sample at once. No obligation to buy.
Do it NOW.*

The Chicago Wire Chair Co.
616 N. LaSalle St., Chicago, Ill.
Eastern Office: 119 E. 27th St., New York City

FREE TRIAL AND CATALOG

Let me try a Production Chair
Graduated heights from 18-30" ☐

Let me try a Bridgebilt Stool
Height...Ins. (18-24) (24-30) ☐



Canton Pedestal and Bench Pneumatic Riveters

Have the speed necessary for high production and low costs.

On $\frac{3}{16}$ " rivets a Canton strikes 4800 blows per minute.

Smaller sizes with a speed as high as 5500.

How can you expect best results with machines of 2000 to 3000 blows per minute?

*We also build a complete line of
Chipping and Calking Hammers*

Canton Pneumatic Co.
1720-9th St., S. W., Canton, Ohio

TAPPING?

Try a "PROCUNIER". Blind holes can be tapped just as easily as through holes, and without danger of breakage.

**Balanced Reverse— All Hardened Gears
Specially Treated Clutches
Fool-proof Safety Friction Device
Reliable Tap Holder**



No. 1 Style A, $\frac{7}{32}$ in steel.....	\$28.00
No. 2 Style A, $\frac{7}{16}$ in steel.....	34.00
No. 3 Style A, $\frac{1}{2}$ in steel.....	40.00
No. 4 Style A, $\frac{5}{8}$ in steel.....	52.00

Don't hesitate to ask for a free trial.

*Catalogue 102-B gives complete details of "PROCUNIER"
Safety Tapping and Quick Change Chucks, Stud
Setters and Bench Tapping Machines.*

Procunier Safety Chuck Co.
14 S. Clinton St., Chicago, Ill.

SAMSON CHUCKS



**INDEPENDENT CHUCKS —
4-Jaw with Solid Reversible Jaws**

These chucks are extra strong, combining superior workmanship, finest materials and guaranteed accuracy. The four three-stepped jaws are adjustable singly, and are reversible so that work pieces can be held with them from the inside and outside.

**UNIVERSAL CHUCKS—Geared Scroll
with 2 Sets of Jaws**

Jaws are oil-hardened and ground perfectly true. Two sets supplied,
No. 1 with capacity as great as the chuck diameter,
No. 2 for bar work and hollow pieces.

*Both styles of Chucks are carried in all sizes and are sold at
prices very much below the regular market—
Send for Bulletins*

H. J. HAGEN, 109 Lafayette St.,
NEW YORK, N. Y.

DO YOU USE
Hollow Bored Forgings
and Steel Shafts?



We will save you money on your Lathe Spindles, Rams, Clutch Shafts, Piston Rods and similar parts, made to your specifications. Finest quality of materials and workmanship. Send us your blueprints and we will quote prices that will surprise you!

High Quality—Right Prices—Good Service

American Hollow Boring Co.
Erie, Penna.

MARKING DEVICES

RUBBER STAMPS



STEEL STAMPS



BURNING BRANDS



**ETCHED METAL
 NAME PLATES**



**BRASS
 LABELS**



THE SCHWERTLE STAMP CO.
BRIDGEPORT, CONN.

Noiseless, Fast Riveting with a GRANT



Speed—One rivet per second.

Uniformity—Each rivet is finished to the exact degree of tightness or looseness you require.

Finish—Heads perfectly formed, unmutated.

GRANT ROTARY

So well adapted to difficult work that no corner is too inaccessible for it to place a rivet. Yet it is so simple in operation that a boy or girl can handle it efficiently.

*Send samples of your work
for riveting and cost estimate*

The Grant Mfg. & Machine Co.
C. E. Station, Bridgeport, Conn.

Vanderbeek Universal Joints



—represent the practical refinements of 25 years experience in manufacturing Universal Joints. All parts are generous sized, fully protected against dirt, and are practically self-oiling. Exceptionally strong, they transmit full power up to 70°.

Vanderbeek Joints are in daily use on thousands of machines.

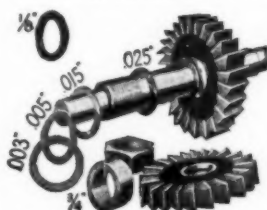
*Write today for our
Descriptive Catalog.*

American Tool Works, Inc.
Hartford, Conn., U. S. A.



Steel Spacing Washers—

Made of a good grade of Cold Rolled Strip Steel, also known as Shim Steel



Stock sizes for arbors of following diameters: $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, $\frac{7}{8}$, 1, $1\frac{1}{8}$, $1\frac{1}{4}$, $1\frac{3}{8}$, $1\frac{1}{2}$, $1\frac{3}{4}$, $1\frac{7}{8}$, 2, $2\frac{1}{4}$, $2\frac{1}{2}$, 3, $3\frac{1}{2}$ and 4 in. and larger.

Stock thicknesses: .002, .003, .004, .005, .006, .007, .008, .010, .012, .015, .020, .025, .032, .047, .063, .093 and .125 inch.

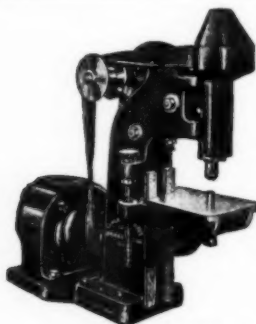
Other thicknesses up to 3.000" made to order, with keyways if so ordered.

Ask us to send samples; you'll like them

Detroit Stamping Company

3443 West Fort St.,

Detroit, Mich.



For Your Small RIVETING

The Linley Rotary RIVET SPINNER

Covers a wide field of riveting.
Simple in design but—
Rigid and powerful.
Guaranteed to give satisfaction.

Get the full details before buying a riveter

**WE ALSO
MANUFACTURE**

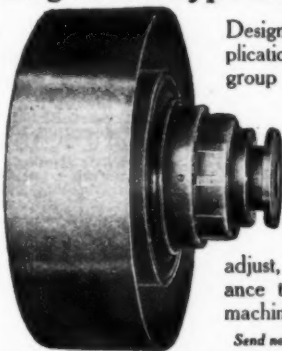
**EQUIPMENT FOR ROTARY
RIVET SPINNING MACHINES**

SEND FOR DESCRIPTIVE FOLDER

Linley Brothers Co.,

579 Fairfield Ave.,
Bridgeport, Conn.

Edgemont Type E Disc Clutch



Designed for machine applications, high speeds and group drives, but is also adaptable for any other drives where an efficient, powerful clutch is needed. Extremely easy to operate and adjust, with neat appearance to match the best machine tools.

Send now for "Type E" bulletin

THE EDMONT MACHINE CO., Dayton, Ohio



T. H. L. Punches

Insure Continuous and Profitable Production

Because they are made of the right quality of tool steel.

Because they are hardened with every care.

Because all our experience of 40 years is centered in making them accurate, rugged and dependable.

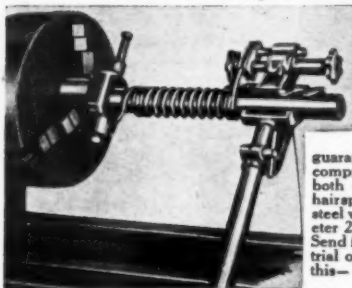


*Large stock of regular sizes
Special sizes quickly made*

T. H. Lewthwaite Machine Co.
311 East 47th St., (Est. 1890) New York City

Wind Your Own Springs

With this *Superior Tool*



ON LATHE OR VISE

The **Right Springs** for any job can be wound **perfect and uniform**. Pitch adjusting screw with **graduations**

guarantees correct tension or compression—closes pitch on both ends. **Capacity**—hairspring to $\frac{1}{4}$ -in. tempered steel wire, maximum diameter 2 in. Rated concerns: Send for our special 5 days' trial offer and low price on this—

Handy Long Life Utility Tool

Superior Spring Winding Tool Co.

778 Third Street,

Milwaukee, Wis.

Townsend Centrifugal Multi-Blow Riveters



You have heard of them.

Used in all countries.

The one riveter that imitates riveting with hand hammer and set.

17 STYLES

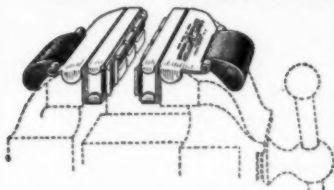
Rivets from from .008" to $\frac{5}{16}$ " without distortion, or breaking fragile materials—porcelain, glass, hard rubber, bakelite, carbon, etc.

Especially for fine, high grade work.

H. P. Townsend Mfg. Co.

Hartford, Conn.

**At Last—A Perfect Holding Tool
for All IRREGULAR Shapes!**



P. & K. VISE- GRIPS

Hold any shape—round, square, curved, etc., without abnormal pressure.

P. & K. VISE GRIPS consist of a pair of detachable compensating jaws that can be used on any vise to hold any shape. On or off in a second. No marring or jamming—no complicated parts or springs.

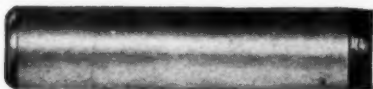
Two sizes: No. 4—4" size, fits vises up to 4".....\$6.00.
No. 5—5" size, fits vises up to 6".....\$6.75.

FREE TRIAL OFFER: Try them out in Your Shop for 10 Days FREE.

Pitts & Kitts Mfg. & Supply Co.
91 Seventh Ave., New York, N. Y.

(Distributors wanted in all sections of U. S. A. Write for terms)

ACME DOWEL PINS



Standard hardened and ground to within .0002" over listed sizes. Also carried oversize .001" for use in repair work, etc. Ask for Bulletin No. 551.

ACME DRILL BUSHINGS


Bulletin No. 501 describes and illustrates the various types and standard sizes of ACME Drill Bushings. Special sizes made to your order.

Bulletins and special low prices sent upon request.



ACME INDUSTRIAL CO.
419 Carpenter St., Chicago, Ill.

NEVER LEAKS
SWIVELS FREELY
UNBREAKABLE
FOR ANY HOSE
CONNECTION



Guaranteed
Quick-As-Wink
HOSE COUPLINGS

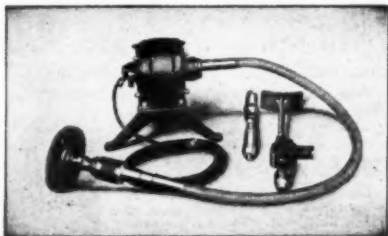
Send for Free Sample

Made of famous Tobin Bronze, Quick-As-Wink Hose Couplings resist the most severe usage—are not affected by mud, snow or ice—connect and disconnect by workman in 30 seconds but never accidentally. Guaranteed one year. Sizes $\frac{1}{4}$ " to 4". Get descriptive literature and prices.

C. B. HUNT & SON, Salem, Ohio
643 McKinley Avenue

The Whirlwind Buffer and Grinder

Will cut the cost on any unhandy grinding or polishing job



Send for our latest bulletin

Stow Flexible Shaft Co.

3623-25 Brandywine St.,

Philadelphia, Pa.

The Best Since 1876

THE KELLERFLEX

A Flexible Shaft Machine of a Hundred Uses.



Built in sizes to meet all requirements.

Speeds up to 10,500.

For snagging, burring, lapping, buffing,
polishing, sanding, drilling,
wire-brushing, etc.

COMPLETE LINE OF ACCESSORIES

Rotary files, emery wheels, sanding
drums, wire brushes, etc.

Tell us your problem.

*Builders of the
Keller Automatic Die Cutting Machines.*

Keller Mech. Engineering Corp., **KME** 58A Washington St.
BROOKLYN, N. Y.

Mall "Jack of All Trades"

and

Masters Them Too



**Cleaning
Scraping
Filing
Sanding
Polishing
Grinding
Sawing
Finishing**

**Mall Tools are
powerful tools**

Write for Catalog

Mall Tool Company, 7730 So. Chicago Ave.,
Chicago, Illinois

**GITS
BROS.**

**Better
Oilers**

287 Styles & Sizes



GITS BROS MFG. CO.
1940 S. Gibson Chicago,

No "Time Out" If You Use

the

HANDIEST RACKS



There's no need for your lathe or screw machine operators to make costly trips to the store room if you keep the various sizes of pipe, shafting, bar stock, etc., neatly piled and assorted on HANDIEST RACKS. Take up little space—are just the right height—and they save time and steps, enough to pay for themselves in a short time. Also very handy for storage purposes as they will fit in almost everywhere.

Shipped on FREE TRIAL Send for a Set Today.

Wm. S. Yohe Supply Co.
503 Mahoning Road, N. E., Canton, Ohio



Opened



**Hercules Shears
and Rod Cutters**

are the most powerful
hand tools on the mar-
ket. Made in several
styles for bench and
floor mounting. Capac-
ties: Rod 1-8 to 3-4 in.
diameter; sheet 1-16 to
6-16 in. thickness.

**TUCKER OIL
CUPS
and OIL HOLE COVERS**

COMPACT — DURABLE — ECONOMICAL
A Style and Size for Every Purpose

Easily closed by twist of fingers or self-
closing. This feature means a dust-
and grit-tight cup and prevents oil
throwing during machine operation.

Opened



Style F



Send for Catalog No. 13 and Samples

W. W. & C. F. TUCKER, INC.
612 Capitol Ave., Hartford, Conn.

FOREIGN AGENTS: Fenwick Freres & Co., Paris, France.
Buck & Hickman Ltd., London, England.
Alfred Herbert Ltd., Yokohama, Japan.

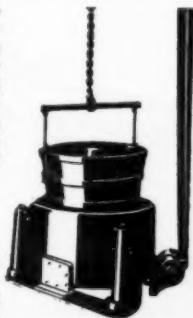
**SAVE THE OIL FROM
LONG, CURLY TURNINGS TOO**

The Tolhurst 40" and 48" Chip
Wringers handle long, curly
turnings just as readily as fine
chips. These large capacity
units, replacing small one and
two bushel machines, show very
definite operating economies
and in many cases do double or
treble the work with one-half
the labor.

Write for Catalog

Tolhurst Machine Works, Inc.
TROY, N. Y.

New York Office: 30 Church Street
Chicago Office: 8 So. Dearborn St.



PALMGREN
Off-Set Boring Tool
With
Micrometer Adjustment



For

Milling Machine, Drill Press, Boring Mill or Screw Machine.

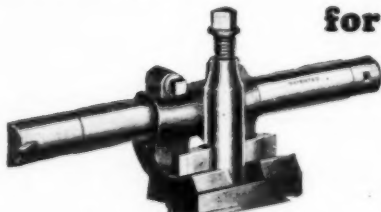
Tool Always in Line With Work

Made with Morse Taper, Brown & Sharpe, Square or Straight Round Shanks.

Write for Prices Today

Chicago Tool & Engineering Company
 8389-93 South Chicago Ave., **CHICAGO, ILL.**

Scully Adjustable
Boring and Turning Bars
for Lathes



Made to fit either
 tool posts or cross
 slides.

Large range of ad-
 justments.

Bars held rigid.

For boring, turn-
 ing and threading.

Send for booklet and full information

Scully Steel & Iron Co.
 2364 So. Ashland Ave., **Chicago, Ill.**

Has the Work Stood Still

While high priced mechanics
dig fretfully at a broken tap?



The Walton Tap Extractor—

is the tool that solves your problem. Simply insert the fingers into the flutes, twist the outer end, and the tap slides out. Made in 3 and 4-flute styles.

Sixty days' trial will prove its value

The Walton Company
302 Pearl St., Hartford, Conn.



"SCULLY-JONES"

Self-Aligning Reamer Holders

For Screw Machines—Turret Lathes—Drill Presses

COMPENSATES for all irregularities in machine alignment. Reamer can float to one side, at the same time swing on an angle in any direction to align itself with the work.

THESE HOLDERS are made in five standard sizes for reamers up to 3" diameter. Adaptable to any style machine drive or reamer shank.

ORDER ONE ON APPROVAL

Write for copy of our Small Tool Catalog No. 36 which completely lists and describes these Holders as well as all other "Wear Ever" Production Tools.

SCULLY-JONES & CO., TOOL DIVISION
1901 S. Rockwell St., CHICAGO, ILL.

Classified Finding Index

- Arbors, Solid**
Nicholson & Co., W. H., Wilkes-Barre, Pa.
- Auto-Gages For Dies**
Daily Machine Specialties, Inc., 2118 So. 82nd Ave., Chicago
- Automatics**
New Britain Machine Co., New Britain, Conn.
- Balancing Ways**
Anderson Iron Mfg. Co., Rockford, Ill.
Sundstrand Machine Tool Co., Rockford, Ill.
- Balls, Bearing and Burnishing**
Abbott Ball Co., Hartford, Conn.
- Band Saw Machines, for Metal**
Armstrong-Blum Mfg. Co., 341 N. Francisco Ave., Chicago
Porter-Cable Machine Co., Syracuse, N. Y.
Racine Tool & Machine Co., Racine, Wis.
Wells Mfg. Corp., Three Rivers, Mich.
- Bar Cutters**
Buffalo Forge Co., Buffalo, N. Y.
- Barrels, Yumbling**
Abbott Ball Co., Hartford, Conn.
- Bench Legs, Steel**
New Britain Mch. Co., New Britain, Conn.
- Bending Machines, Hand and Power**
Armstrong-Blum Mfg. Co., 341 N. Francisco Ave., Chicago
Buffalo Forge Co., Buffalo, N. Y.
Excelsior Tool & Mch. Co., E. St. Louis, Ill.
Hendley & Whittemore Co., Beloit, Wis.
Lenthwaite Mch. Co., T. H. 311 E. 47th., N. Y.
Lourie Mfg. Co., 565 Washington, Chicago
Pedrick Tool & Machine Co., Philadelphia
- Bending Rolls**
Hendley & Whittemore Co., Beloit, Wis.
- Bolt and Nut Machinery**
Economy Engineering Co., Willoughby, O.
Foots-Burt Co., Cleveland, O.
- Boring Bars**
Chicago Tool & Engineering Co., 8389 So. Chicago Ave., Chicago
Pedrick Tool & Machine Co., Philadelphia
Scully Steel & Iron Co., 2364 So. Ashland Ave., Chicago
- Boring Bars, Cylinder**
Pedrick Tool & Machine Co., Philadelphia
- Boring, Drilling & Milling Machines**
Defiance Machine Co., Defiance, O.
- Boring and Drilling Mchcs., Vertical**
Baker Brothers, Inc., Toledo, Ohio
- Boring and Turning Machines, Vertical**
Cincinnati Planer Co., Cincinnati, Ohio
- Boring Machines, Horizontal**
Avey Drilling Machine Co., Cincinnati
Morris Machine Tool Co., Cincinnati, Ohio
Pedrick Tool & Machine Co., Philadelphia
- Boring Tools**
Chicago Tool & Engineering Co., 8389 So. Chicago Ave., Chicago
The Co-Operative Mch. Co., Cleveland, O.
Rickert-Shafer Co., Erie, Pa.
- Brands, Burning**
Schwerdtle Stamp Co., Bridgeport, Conn.
- Buffers, Bench Type**
Hazy-Wolf Machine Co., Cincinnati, Ohio
- Buffers, Combination Grinder**
Hazy-Wolf Machine Co., Cincinnati, Ohio
- Buffers, Floor Stand**
Hazy-Wolf Machine Co., Cincinnati, Ohio
- Buffers, Portable Electric**
Hazy-Wolf Machine Co., Cincinnati, Ohio
- Buffing Wheels**
Hunt & Son, C. B., Salem, Ohio
- Buildovers, Hydraulic**
Lourie Mfg. Co., 565 Washington, Chicago
- Bushings, Drill**
Acme Industrial Co., 419 N. Carpenter St., Chicago
- Burnishing Equipment, Ball**
Abbott Ball Co., Elmwood, Conn.
- Bushing Finishing Machines**
Economy Engineering Co., Willoughby, O.
- Calipers, Vernier**
Scherr Co., Geo., 144 Liberty St., New York
- Center Grinders**
Chicago Tool & Engineering Co., 8389 So. Chicago Ave., Chicago
- Centering Machines**
Sundstrand Machine Tool Co., Rockford, Ill.
- Chamfering Machines, Automatic**
Grant Mfg. & Mch. Co., Bridgeport, Conn.
- Chaser Grinders**
National Acme Co., Cleveland, Ohio
- Chucking Machines**
New Britain Mch. Co., New Britain, Conn.
Springfield Machine Tool Co., Springfield, O.
Stevens Inc., John B., 27 Cleveland Place, New York
- Chucks, Automatic and Quick Change**
Procon Safety Chuck Co., 18 S. Clinton St., Chicago
- Chucks, Collet**
Ames Co., B. C., Waltham, Mass.
Hardinge Brothers, Inc., 1770 Harten Ave., Chicago
Procon Safety Chuck Co., 18 S. Clinton St., Chicago
- Chucks, Drill**
Eastern Tube & Tool Co., Inc., 805 Johnson Ave., Brooklyn, N. Y.
Hartford Special Mch. Co., Hartford, Conn.
Scully-Jones & Co., 1901 So. Rockwell St., Chicago
- Chucks, Drill and Tap**
Bicknell-Thomas Co., Greenfield, Mass.
Procon Safety Chuck Co., 18 S. Clinton St., Chicago
Scully-Jones & Co., 1901 So. Rockwell St., Chicago
- Chucks, Lathe**
Stevens Inc., John B., 27 Cleveland Place, New York
- Chucks, Magnetic**
J. & H. Electric Co., Providence, R. I.
- Chucks, Oval**
Frew Machine Co., Philadelphia, Pa.
- Clamps, Die**
Daily Machine Specialties, Inc., 2118 So. 82nd Ave., Chicago
- Clutches, Friction**
Conway Clutch Co., Cincinnati, O.
Edgemont Machine Co., Dayton, O.
Foots Bros. Gear & Machine Co., 111 North Canal St., Chicago
Jones Foundry & Machine Co., W. A., 4450 W. Roosevelt Road, Chicago

Classified Finding Index

Cold Saws

Burke Machine Tool Co., Connecticut, Ohio

Collets

Ames Co., B. C., Waltham, Mass.
Hardinge Brothers, Inc., 1770 Berteau Ave.,
Chicago

Comparators

Federal Products Corp., Providence, R. I.

Contract Work Wanted

Burke Machine Tool Co., Connecticut, O.

Cone Drills

Bicknell-Thomas Co., Greenfield, Mass.

Counterbores and Spot Facers

Bicknell-Thomas Co., Greenfield, Mass.
Glenzer Co., J. C., Detroit, Mich.
Scully-Jones & Co., 1901 S. Rockwell St.,
Chicago

Couplings, Friction Clutch

Conway Clutch Co., Cincinnati, O.
Jones Foundry & Machine Co., W. A., 4450
W. Roosevelt Road, Chicago

Couplings, Flexible

Foots Bros. Gear & Machine Co., 111 North
Canal St., Chicago
Jones Foundry & Machine Co., W. A.,
4450 W. Roosevelt Road, Chicago
Nicholson Co., W. H., Wilkes-Barre, Pa.

Couplings, Shaft

Jones Foundry & Machine Co., W. A., 4450
W. Roosevelt Road, Chicago
Nicholson Co., W. H., Wilkes-Barre, Pa.

Cranes, Portable

Canedy-Otto Mfg. Co., Chicago Heights,
Canton Foundry & Mch. Co., Canton, Ohio

Crank Pin Turning Machine

Pedrick Tool & Machine Co., Philadelphia

Cutters, Keysawing

Davis Keysawer Co., Rochester, N. Y.
Scully-Jones & Co., 1901 S. Rockwell St.,
Chicago

Cutters, Milling

Brown & Sharpe Mfg. Co., Providence, R. I.
Bend-Prentice Corp., Worcester, Mass.
Scully-Jones & Co., 1901 S. Rockwell St.,
Chicago

Cutting-Off Machines

Scherr Co., Geo., 144 Liberty St., New York

Cylinder Boring Machines, Portable

Pedrick Tool & Machine Co., Philadelphia

Demagnetizers

J. & H. Electric Co., Providence, R. I.

Die Making Machines

Oliver Instrument Co., Adrian, Mich.

Dies, Automatic Self-Opening

Rickert-Shafer Co., Erie, Pa.

Die Sets

Haubach Mfg. Co., E. A., 1812 So. Kil-
bourne Ave., Chicago
Daily Machine Specialties, Inc., 2116 So.
52nd Ave., Chicago
John H. Dorman, West New York, N. J.

Die Sinking and Engraving Machines

Keller Mech. Eng. Corp., 58A Washington
St., Brooklyn, N. Y.

Dividing Heads

Scherr Co., Geo., 144 Liberty St., New York
Stevens Inc., John B., 27 Cleveland Place,
New York

Drill Chucks

Hagen, H. J., 30 Church St., New York

Drill Holders

Chicago Tool & Engineering Co., 6389 So.
Chicago Ave., Chicago

Drill Racks

Peetless Machine Co., Racine, Wis.

Drilling Heads, Multiple

John H. Dorman, West New York, N. J.
Osterlein Machine Co., Cincinnati, Ohio
United States Drill Head Co., Cincinnati

Drilling Machines, Automatic

Baker Brothers Inc., Toledo, Ohio.
Bradford Machine Tool Co., Cincinnati, Ohio
Superior Machine Tool Co., Kokomo, Ind.

Drilling Machines, Bench

Ames Co., B. C., Waltham, Mass.
Avey Drilling Machine Co., Cincinnati
Buffalo Forge Co., Buffalo, N. Y.
Burke Machine Tool Co., Connecticut, Ohio
Canedy-Otto Mfg. Co., Chicago Heights, Ill.
National Elect. Prod. Co., 148 Baxter, N.Y.
Sigourney Tool Co., Hartford, Conn.
Stecher Co., Chas., 2452 N. Greenview Ave.,
Chicago
Superior Machine Tool Co., Kokomo, Ind.
Taylor & Fenn Co., Hartford, Conn.
U. S. Electrical Tool Co., Cincinnati, Ohio
Winterhoff Tool & Machine Co., Elkhart, Ind.

Drilling Machines, Boiler

National Elect. Prod. Co., 148 Baxter, N.Y.

Drilling Machines, Gang

Baker Brothers, Inc., Toledo, Ohio.
Superior Machine Tool Co., Kokomo, Ind.

Drilling Machines, Horizontal

Detroit Machine Tool Co., Detroit, Mich.
Frew Machine Co., Philadelphia, Pa.
Morris Machine Tool Co., Cincinnati, Ohio
National Elect. Prod. Co., 148 Baxter, N.Y.
Stevens Inc., John B., 27 Cleveland Place,
New York

Drilling Machines, Multiple Spindle

Avey Drilling Machine Co., Cincinnati
Baker Brothers, Inc., Toledo, Ohio.
Detroit Machine Tool Co., Detroit, Mich.
Foots-Burt Co., Cleveland, O.
National Elect. Prod. Co., 148 Baxter, N.Y.
Sigourney Tool Co., Hartford, Conn.
Superior Machine Tool Co., Kokomo, Ind.
Taylor & Fenn Co., Hartford, Conn.

Drilling Machines, Portable Electric

Hiser-Wolf Machine Co., Cincinnati, O.
Hall Tool Co., 7730 S. Chicago Ave., Chicago
National Elect. Prod. Co., 148 Baxter, N.Y.
Standard Electrical Tool Co., Cincinnati, O.
Stow Flexible Shaft Co., Philadelphia, Pa.
Strand Co., N. A., 6001 N. Lincoln St., Chicago
U. S. Electrical Tool Co., Cincinnati, Ohio
Vim Tool Co., 149 Broadway, New York
Winterhoff Tool & Machine Co., Elkhart, Ind.

Drilling Machines, Post

Canedy-Otto Mfg. Co., Chicago Heights, Ill.
Hammond Mfg. Co., Cleveland, Ohio.
Hisey-Wolf Machine Co., Cincinnati, Ohio
National Elect. Prod. Co., 148 Baxter, N.Y.

Drilling Machines, Radial

American Tool Works Co., Cincinnati, O.
Canedy-Otto Mfg. Co., Chicago Heights, Ill.
Dresses Machine Tool Co., Cincinnati, O.
Hammond Mfg. Co., Cleveland, Ohio.
Morris Machine Tool Co., Cincinnati, Ohio
National Elect. Prod. Co., 148 Baxter, N.Y.
Taylor & Fenn Co., Hartford, Conn.

Classified Finding Index

Drilling Machines, Semi-Automatic
Detroit Machine Tool Co., Detroit, Mich.

Drilling Machines, Sensitive
Avey Drilling Machine Co., Cincinnati
Baker Brothers, Inc., Toledo, Ohio
Buffalo Forge Co., Buffalo, N. Y.
Burke Machine Tool Co., Conneaut, Ohio
Canedy-Otto Mfg. Co., Chicago Heights, Ill.
Foots-Burt Co., Cleveland, O.
Leland-Gifford Co., Worcester, Mass.
National Elect. Prod. Co., 148 Baxter, N. Y.
Sigourney Tool Co., Hartford, Conn.
Stecher Co., Chas., 2482 N. Greenview Ave., Chicago
Taylor & Fenn Co., Hartford, Conn.
U. S. Machine Tool Co., Cincinnati, O.

Drilling Machines, Vertical
Avey Drilling Machine Co., Cincinnati
Buffalo Forge Co., Buffalo, N. Y.
Canedy-Otto Mfg. Co., Chicago Heights, Ill.
Foots-Burt Co., Cleveland, O.
Leland-Gifford Co., Worcester, Mass.
Marsh Machinery Co., A. R., Cleveland, Ohio
National Elect. Prod. Co., 148 Baxter, N. Y.
Oesterlein Machine Co., Cincinnati, Ohio
Sigourney Tool Co., Hartford, Conn.
Standard Electrical Tool Co., Cincinnati, O.
Stecher Co., Chas., 2482 N. Greenview Ave., Chicago
Superior Machine Tool Co., Kokomo, Ind.
Taylor & Fenn Co., Hartford, Conn.

Drilling Stands, Bench, Post and Radial
Hisey-Wolf Machine Co., Cincinnati, Ohio

Drills, Marble
Hisey-Wolf Machine Co., Cincinnati, Ohio

Drills, Twist
Cleveland Twist Drill Co., Cleveland, Ohio.

Emery Wheel Dressers and Cutters
Taylor & Fenn Co., Hartford, Conn.
Western Tool & Mfg. Co., Springfield, O.

Engravers, Mechanical and Hand
Schwerdtle Stamp Co., Bridgeport, Conn.

Etching Machines, Electric
Brewster Co., Wm., Inc., 50 Church St., New York
Luma Electric Equipment Co., Toledo, Ohio.

Feeders, Oil and Soda Water
New Britain Machine Co., New Britain, Conn.

Filing Machines
LaPorte Machine & Tool Co., LaPorte, Ind.
Oliver Instrument Co., Adrian, Mich.
Wardwell Mfg. Co., Cleveland, O.

Filing and Sawing Machines
LaPorte Machine & Tool Co., LaPorte, Ind.

Flexible Shaft Machinery
Keller Mech. Eng. Corp., 684 Washington St., Brooklyn, N. Y.
Wall Tool Co., 7730 S. Chicago Ave., Chicago

Fine Sheet Tools
Dicknell-Thomas Co., Greenfield, Mass.

Forges
Canedy-Otto Mfg. Co., Chicago Heights, Ill.

Forgings, Hollow Bored
American Hollow Boring Co., Erie, Pa.

Furniture, Machine Shop
New Britain Machine Co., New Britain, Conn.
Western Tool & Mfg. Co., Springfield, O.

Gages, Cylindrical and Thread
Federal Products Corp., Providence, R. I.

Gages, Dial
Ames Co., B. C., Waltham, Mass.
Federal Products Corp., Providence, R. I.
Standard Gage Co., Poughkeepsie, N. Y.

Gages, Pin, Plug, Ring and Snap
Standard Gage Co., Poughkeepsie, N. Y.

Gages, Special
Standard Gage Co., Poughkeepsie, N. Y.

Gauges, Taper
Hartford Special Mch. Co., Hartford, Conn.

Gear Cutters
Brown & Sharpe Mfg. Co., Providence, R. I.
Triplex Machine Tool Corp., 50 Church St., New York

Gear Hobbers
Scherr Co., Geo., 144 Liberty St., New York
Triplex Machine Tool Corp., 50 Church St., New York

Gears
Boston Gear Works Sales Company, Norfolk Downs, Mass.
Chicago Stock Gear Works, 105 S. Jefferson, Chicago
Foots Bros. Gear & Machine Co., 111 North Canal St., Chicago
Jones Foundry & Machine Co., W. A., 4450 W. Roosevelt Road, Chicago
Massachusetts Gear & T. Co., Woburn, Mass.

Gears, Herringbone
Foots Bros. Gear & Machine Co., 111 N. Canal St., Chicago
Jones Foundry & Machine Co., W. A., 4450 W. Roosevelt Road, Chicago

Grinding Machines, Angle Plate
Hisey-Wolf Machine Co., Cincinnati, Ohio

Grinding Machine Att., Pneumatic Turbine
Onsrud Machine Works, Inc., 2910 Palmer St., Chicago

Grinding Machines, Belt
Gallmeyer & Livingston Co., Grand Rapids, Mich.
Lehmann Machine Co., St. Louis, Mo.
Peerless Surfacing Machine Co., Troy, N. Y.
Wall Sales Corp., 96 Warren St., New York

Grinding Machines, Bench
Gallmeyer & Livingston Co., Grand Rapids, Mich.
Hammond Mch. Builders, Inc., Kalamazoo, Mich.
Hisey-Wolf Machine Co., Cincinnati, O.
Standard Electrical Tool Co., Cincinnati, O.
U. S. Electrical Tool Co., Cincinnati, Ohio

Grinding Mchs., Combination Buffer
Hisey-Wolf Machine Co., Cincinnati, Ohio

Grinding Machines, Cutter, Reamer and Tool
Brown & Sharpe Mfg. Co., Providence, R. I.
Gallmeyer & Livingston Co., Grand Rapids, Mich.
Jarschl Mch. & T. Co., Grand Rapids, Mich.
LeBlond Mch. Tool Co., R. K., Cincinnati, O.
National Machine Tool Co., Racine, Wis.
Oesterlein Machine Co., Cincinnati, Ohio
Oliver Instrument Co., Adrian, Mich.
Stevens Inc., John B., 27 Cleveland Place, New York
Thompson Grinder Co., Springfield, Ohio
U. S. Electrical Tool Co., Cincinnati, Ohio

Grinding Machines, Cylindrical
Brown & Sharpe Mfg. Co., Providence, R. I.
Jarschl Mch. & T. Co., Grand Rapids, Mich.
Thompson Grinder Co., Springfield, Ohio

Classified Finding Index

Grinding Machines, Die
Gallmeyer & Livingston Co., Grand Rapids, Mich.
Jarecki Mch. & T. Co., Grand Rapids, Mich.
Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Disc
Gallmeyer & Livingston Co., Grand Rapids, Mich.
Gardner Machine Co., Beloit, Wis.
Hissey-Wolf Machine Co., Cincinnati, Ohio
Porter Cable Machine Co., Syracuse, N. Y.
Winterhoff Tool & Mch. Co., Elkhart, Ind.

Grinding Machines, Drill
Gallmeyer & Livingston Co., Grand Rapids, Mich.
Oliver Instrument Co., Adrian, Mich.

Grinding Machines, External
Hissey-Wolf Machine Co., Cincinnati, Ohio

Grinding Machines, Face
Taylor & Fenn Co., Hartford, Conn.

Grinding Machines, Floor
Hissey-Wolf Machine Co., Cincinnati, Ohio
U. S. Electrical Tool Co., Cincinnati, Ohio

Grinding Machines, Flexible Shaft
Keller Mch. Eng. Corp., 58A Washington St., Brooklyn, N. Y.

Grinding Machines, Hob
Scherr Co., Geo., 144 Liberty St., New York

Grinding Machines, Internal
Chicago Tool & Engineering Co., 8389 So. Chicago Ave., Chicago
Hissey-Wolf Machine Co., Cincinnati, Ohio
Mall Tool Co., 8389 S. Chicago Ave., Chgo.
National Machine Tool Co., Racine, Wis.
Onsrud Machine Works, Inc., 3910 Palmer St., Chicago
Taylor & Fenn Co., Hartford, Conn.
Thompson Grinder Co., Springfield, Ohio
U. S. Electrical Tool Co., Cincinnati, Ohio

Grinding Machines, Portable Electric
Chicago Tool & Engineering Co., 8-89 So. Chicago Ave., Chicago
Hissey-Wolf Machine Co., Cincinnati, O.
Keller Mch. Eng. Co., 58A Washington St., Brooklyn, N. Y.
Mall Tool Co., 7780 S. Chicago Ave., Chgo.
National Machine Tool Co., Racine, Wis.
Porter-Cable Machine Co., Syracuse, N. Y.
Standard Electric Tool Co., Cincinnati, O.
Slow Flexible Shaft Co., Philadelphia, Pa.
Strand Co., N. A., 5091 N. Lincoln St., Chgo.
U. S. Electrical Tool Co., Cincinnati, Ohio
Vim Tool Co., 149 Broadway, New York
Winterhoff Tool & Mch. Co., Elkhart, Ind.

Grinding Machines, Snagging
Gallmeyer & Livingston Co., Grand Rapids, Mich.
Hammond Mch. Builders, Inc., Kalamazoo, Mich.
Hissey-Wolf Machine Co., Cincinnati, Ohio
Jarecki Mch. & T. Co., Grand Rapids, Mich.
Lehmann Machine Co., St. Louis, Mo.
U. S. Electrical Tool Co., Cincinnati, Ohio

Grinding Machines, Surface
Gallmeyer & Livingston Co., Grand Rapids, Mich.
Illinois Machine & Mfg. Co., LaSalle, Ill.
Stevens Inc., John B., 27 Cleveland Place, New York
Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Tap
Gallmeyer & Livingston Co., Grand Rapids, Mich.

Grinding Machines, Tool
Hill-Curtis Co., Kalamazoo, Mich.
Hissey-Wolf Machine Co., Cincinnati, Ohio
Oesterlein Mach. Co., Cincinnati, Ohio
Standard Electrical Tool Co., Cincinnati, O.
Taylor & Fenn Co., Hartford, Conn.

Grinding Machines, Tool Post
Hissey-Wolf Machine Co., Cincinnati, Ohio

Grinding Machines, Universal
Brown & Sharpe Mfg. Co., Providence, R. I.
Gallmeyer & Livingston Co., Grand Rapids, Mich.
Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Vertical Spindle
Hissey-Wolf Machine Co., Cincinnati, Ohio

Grinding Wheel Dressers
Hissey-Wolf Machine Co., Cincinnati, Ohio

Hack Saw Blades
Armstrong-Blum Mfg. Co., 841 N. Francisco Ave., Chicago
Pearless Machine Co., Racine, Wis.
Racine Tool & Machine Co., Racine, Wis.
Victor Saw Works, Inc., Middletown, N. Y.

Hack Saw Machines
Armstrong-Blum Mfg. Co., 841 N. Francisco Ave., Chicago
Pearless Machine Co., Racine, Wis.
Racine Tool & Machine Co., Racine, Wis.

Hammers, Chipping and Chalking
Canton Pneumatic Co., Canton, Ohio

Hardness Testers
Arnold Co., H. H., Inc., Rockland, Mass.

Hob Grinders
Triplex Machine Tool Corp., 59 Church St., New York

Hoists, Portable
Canton Foundry & Machine Co., Canton, Ohio
Hagen, H. J., 30 Church St., New York

Hose Couplings
Hunt & Son, C. H., Salem, Ohio

Hydraulic Machinery
Lourie Mfg. Co., 565 Washington, Chicago

Index Centers, Single and Multi Spdl.
Brown & Sharpe Mfg. Co., Providence, R. I.
Fay & Scott, Dexter, Maine
Stevens Inc., John B., 27 Cleveland Place, New York

Indicators, Dial
Federal Products Corp., Providence, R. I.
Standard Gage Co., Poughkeepsie, N. Y.

Jigs and Fixtures
John H. Dorman, West New York, N. J.
Hartford Special Mch. Co., Hartford, Conn.
LaPorte Machine & Tool Co., LaPorte, Ind.

Keyseating Machines
Baker Brothers, Inc., Toledo, Ohio.
Hurr & Son, John T., Brooklyn, N. Y.
Davis Keyseater Co., Rochester, N. Y.
National Machine Tool Co., Cincinnati

Lathe Accessories and Attachments
Cincinnati Lathe & Tool Co., Cincinnati, Ohio
The Co-Operative Mch. Co., Cleveland, O.
Fay & Scott, Dexter, Maine
Reed-Prentice Corp., Worcester, Mass.
Sidney Machine Tool Co., Sidney, Ohio

Lathe Chucks
Hagen, H. J., 30 Church St., New York

Lathe Turrets
The Co-Operative Mch. Co., Cleveland, O.

Classified Finding Index

Lathes, Bench

Ames Co., B. C., Waltham, Mass.
Hardinge Brothers, Inc., 1770 Berteau Ave.,
Chicago

Lathes, Engine

American Tool Works Co., Cincinnati, O.
Bradford Machine Tool Co., Cincinnati, O.
Carroll Mch. Tool Co., A. V., Cincinnati, O.
Carroll & Jamieson Mch. Tool Co., Batavia, O.
Chard Lathe Co., New Castle, Ind.
Cincinnati Lathe & Tool Co., Cincinnati, O.
Far & Scott, Dexter, Maine
Hamilton Tool Co., Hamilton, O.
Hardinge Brothers, Inc., 1770 Berteau Ave.,
Chicago

LeBlond Mch. Tool Co., B. K., Cincinnati, O.
Lehmann Machine Co., St. Louis, Mo.
McCabe Lathe & Machinery, Corp., J. J.
140 Broadway, New York

Monarch Machine Tool Co., Sidney, O.
Morris Machine Tool Co., Cincinnati, O.
Porter-Cable Machine Co., Syracuse, N. Y.
Reed-Prentice Corp., Worcester, Mass.
Sebastian Lathe Co., Cincinnati, Ohio
Sidney Machine Tool Co., Sidney, Ohio
Springfield Machine Tool Co., Springfield, O.

Lathes, Extension Bed Gap

LeBlond Mch. Tool Co., B. K., Cincinnati, O.
Rahn-Larson Co., Cincinnati, O.

Lathes, Gap

Carroll Mch. Tool Co., A. V., Cincinnati, O.
LeBlond Mch. Tool Co., B. K., Cincinnati, O.

Lathes, Hand

Stevens Inc., John B., 27 Cleveland Place,
New York

Lathes, Hydraulic Automatic

Monarch Machine Tool Co., Sidney, Ohio

Lathes, Manufacturing

Cincinnati Lathe & Tool Co., Cincinnati, Ohio
LeBlond Mch. Tool Co., B. K., Cincinnati, O.
Lehmann Machine Co., St. Louis, Mo.
Monarch Machine Tool Co., Sidney, Ohio
Reed-Prentice Corp., Worcester, Mass.
Sundstrand Machine Tool Co., Rockford, Ill.

Lathes, Precision

Bradford Machine Tool Co., Cincinnati, Ohio
Cincinnati Lathe & Tool Co., Cincinnati, Ohio
LeBlond Mch. Tool Co., B. K., Cincinnati, O.
Lehmann Machine Co., St. Louis, Mo.
Monarch Machine Tool Co., Sidney, Ohio
Reed-Prentice Corp., Worcester, Mass.

Lathes, Short Bed

Porter-Cable Machine Co., Syracuse, N. Y.
Reed-Prentice Corp., Worcester, Mass.
Sidney Machine Tool Co., Sidney, Ohio

Lathes, Tool Room

Bradford Machine Tool Co., Cincinnati, Ohio
Cincinnati Lathe & Tool Co., Cincinnati, Ohio
Lehmann Machine Co., St. Louis, Mo.
Monarch Machine Tool Co., Sidney, Ohio
Reed-Prentice Corp., Worcester, Mass.

Lathes, Turret

Bradford Machine Tool Co., Cincinnati, O.
Chard Lathe Co., New Castle, Ind.
Cincinnati Lathe & Tool Co., Cincinnati, Ohio
Lehman Machine Co., St. Louis, Mo.
Monarch Machine Tool Co., Sidney, O.

Mandrels, Expanding

Nicholson & Co., W. H., Wilkes-Barre, Pa.
Western Tool & Mfg. Co., Springfield, O.

Mandrels, Solid

Nicholson & Co., W. H., Wilkes-Barre, Pa.

Millers, Tilted Rotary and Offset

Oesterlein Machine Co., Cincinnati, Ohio

Milling Attachments

Brown & Sharpe Mfg. Co., Providence, R. I.
Burke Machine Tool Co., Connecticut, Ohio
Cincinnati Milling Mch. Co., Cincinnati, O.
Kearney & Trecker Corp., Milwaukee, Wis.
LeBlond Mch. Tool Co., B. K., Cincinnati, O.
Porter-Cable Machine Co., Syracuse, N. Y.
Reed-Prentice Corp., Worcester, Mass.
Stevens Inc., John B., 27 Cleveland Place,
New York
Taylor & Fenn Co., Hartford, Conn.

Milling Machine Spacing Washers

The Co-Operative Mch. Co., Cleveland, O.

Milling Machines, Automatic

Oesterlein Machine Co., Cincinnati, Ohio

Milling Machines, Bench

Ames Co., B. C., Waltham, Mass.
Burke Machine Tool Co., Connecticut, Ohio
Sundstrand Machine Tool Co., Rockford, Ill.

Milling Machines, Cam

Frew Machine Co., Philadelphia, Pa.

Milling Machines, Hand

Burke Machine Tool Co., Connecticut, Ohio
Cincinnati Milling Mch. Co., Cincinnati, O.
Frew Machine Co., Philadelphia, Pa.
Sundstrand Machine Tool Co., Rockford, Ill.
Superior Machine & Eng. Co., Milwaukee, Mich.
U. S. Machine Tool Co., Cincinnati, O.

Milling Machines, Horizontal

Oesterlein Machine Co., Cincinnati, Ohio

Milling Machines, Manufacturing

Kearney & Trecker Corp., Milwaukee, Wis.

Milling Machines, Offset

Oesterlein Machine Co., Cincinnati, Ohio

Milling Mchs., Oil Grooves for Half Bearings

Lehmann Machine Co., St. Louis, Mo.

Milling Machines, Plain

Brown & Sharpe Mfg. Co., Providence, R. I.
Burke Machine Tool Co., Connecticut, Ohio
Cincinnati Milling Mch. Co., Cincinnati, O.
Kearney & Trecker Corp., Milwaukee, Wis.
LeBlond Mch. Tool Co., B. K., Cincinnati, O.
Oesterlein Machine Co., Cincinnati, Ohio
Sundstrand Machine Tool Co., Rockford, Ill.

Milling Machines, Portable

Fedrick Tool & Machine Co., Philadelphia

Milling Machines, Rotary

Oesterlein Machine Co., Cincinnati, Ohio

Milling Machines, Spine

Taylor & Fenn Co., Hartford, Conn.

Milling Machines, Universal

Brown & Sharpe Mfg. Co., Providence, R. I.
Cincinnati Milling Mch. Co., Cincinnati, O.
Kearney & Trecker Corp., Milwaukee, Wis.
LeBlond Mch. Tool Co., B. K., Cincinnati, O.
Oesterlein Machine Co., Cincinnati, Ohio

Milling Machines, Vertical

Brown & Sharpe Mfg. Co., Providence, R. I.
Burke Machine Tool Co., Connecticut, Ohio
Cincinnati Milling Mch. Co., Cincinnati, O.
Kearney & Trecker Corp., Milwaukee, Wis.
LeBlond Mch. Tool Co., B. K., Cincinnati, O.
Oesterlein Machine Co., Cincinnati, Ohio
Reed-Prentice Corp., Worcester, Mass.
Taylor & Fenn Co., Hartford, Conn.

Name Plates, Etched and Stamped

Schwerdtle Stamp Co., Bridgeport, Conn.

Classified Finding Index

Nut Setters, Electric
Hisey-Wolf Machine Co., Cincinnati, Ohio
Vim Tool Co., 149 Broadway, New York

Oil Cups
Globe Bros. Mfg. Co., 1940 S. Elmhurst Ave.,
Chicago
Tucker, W. W. & C. F., Hartford, Conn.

Oil Extractors
Tolhurst Machine Works, Troy, N. Y.

Pins, Leader And Dowel
Baumbach Mfg. Co., E. A., 1812 So. Elmhurst Ave., Chicago
Dandy Machine Specialties, Inc., 2116 S. 52nd Ave., Chicago

Pipe Bending Machines
Fedrick Tool & Machine Co., Philadelphia

Planers, Valve Seat, Portable
Fedrick Tool & Machine Co., Philadelphia

Planing Machines
Cincinnati Planer Co., Cincinnati, Ohio
Cleveland Planer Co., Cleveland, Ohio

Point Thinning Machines
Oliver Instrument Co., Adrian, Mich.

Polishing and Buffing Machines
Excelcor Tool & Mch. Co., E. St. Louis, Ill.
Hammond Mch. Builders, Inc., Kalamazoo, Mich.
Hisey-Wolf Machine Co., Cincinnati, O.
Mail Tool Co., 7730 S. Chicago Ave., Chicago
New Britain Machine Co., New Britain, Conn.
Standard Electrical Tool Co., Cincinnati, O.
U. S. Electrical Tool Co., Cincinnati, Ohio

Presses, Arbor
Atlas Press Co., Kalamazoo, Mich.
Laurie Mfg. Co., 565 Washington, Chicago
Nicholson & Co., W. H., Wilkes-Barre, Pa.
Shelden Machine Co., 3253 Cottage Grove Ave., Chicago
Wilson, R. K., Buffalo, N. Y.

Presses, Branching
Laurie Mfg. Co., 565 Washington, Chicago

Presses, Drawing
Laurie Mfg. Co., 565 Washington, Chicago

Presses, Flanging
Laurie Mfg. Co., 565 Washington, Chicago

Presses, Foot
Rockford Iron Works, Rockford, Ill.
Taylor & Fenn Co., Hartford, Conn.

Presses, Forcing
Laurie Mfg. Co., 565 Washington, Chicago

Presses, Forming
Laurie Mfg. Co., 565 Washington, Chicago

Presses, Power
Hendley & Whittemore Co., Beloit, Wis.
Laurie Mfg. Co., 565 Washington, Chicago
Rockford Iron Works, Rockford, Ill.

Presses, Punch
Lewthwaite Mch. Co., T. H., 311 E. 47th., N. Y.
Rockford Iron Works, Rockford, Ill.

Presses, Screw
Fall River Gridding & Machine Co., Fall River, Mass.
Jarecki Mch. & T. Co., Grand Rapids, Mich.

Presses, Wheel
Laurie Mfg. Co., 565 Washington, Chicago

Profiling Machines
Frew Machine Co., Philadelphia, Pa.
Oliver Instrument Co., Adrian, Mich.

Pulley Machinery
Avery Drilling Machine Co., Cincinnati

Pulleys, Iron, Solid and Split
Conway Clutch Co., Cincinnati, O.
Jones Foundry & Machine Co., W. A., 4450 W. Roosevelt Road, Chicago

Pumps, Coolant
Puffo Specialties Co., Manchester, O.

Pumps, Hydraulic
Lewis Mfg. Co., 565 Washington, Chicago

Pumps, Lubricant
Rothman Machinery Co., Cincinnati, O.

Punch Press Feeds
Rockford Iron Works, Rockford, Ill.

Punch, Shear and Bender, Hand
Armstrong Blum Mfg. Co., 341 N. Francisco Ave., Chicago

Punches, Hand
Armstrong-Blum Mfg. Co., 341 N. Francisco Ave., Chicago
Hendley & Whittemore Co., Beloit, Wis.
Lewthwaite Mch. Co., T. H., 311 E. 47th., New York
Whitney Metal Tool Co., Rockford, Ill.

Punches, Power
Hendley & Whittemore Co., Beloit, Wis.

Punches and Dies
Hendley & Whittemore Co., Beloit, Wis.
Lewthwaite Mch. Co., T. H., 311 E. 47th., N. Y.
Rockford Iron Works, Rockford, Ill.

Punches and Shears
Buffalo Forge Co., Buffalo, N. Y.
Excelcor Tool & Mch. Co., E. St. Louis, Ill.

Racks, Bar Stock
New Britain Machine Co., New Britain, Conn.
Yoke Supply Co., Wm. S., Canton, O.

Reamer Holders
Nicholson & Co., W. H., Wilkes-Barre, Pa.

Reamers, Adjustable
Cleveland Twist Drill Co., Cleveland, Ohio.
Schellenbach-Hunt Tool Co., Cincinnati, O.

Reamers, Portable Electric
Hisey-Wolf Machine Co., Cincinnati, Ohio

Reels, Extension
Cincinnati Specialty Mfg. Co., Cincinnati, O.

Riveters, Multiple Spindle
Grant Mfg. & Mch. Co., Bridgeport, Conn.

Riveters, Pneumatic
Grant Mfg. & Mch. Co., Bridgeport, Conn.

Riveting Machine Equipment
Linley Bros. Co., Bridgeport, Conn.

Riveting Machines
Canton Pneumatic Co., Canton, Ohio
Grant Mfg. & Mch. Co., Bridgeport, Conn.
Townsend Mfg. Co., H. P., Hartford, Conn.

Rad Cutters
Armstrong-Blum Mfg. Co., 341 N. Francisco Ave., Chicago
Hendley & Whittemore Co., Beloit, Wis.
Lewthwaite Mch. Co., T. H., 311 E. 47th. N. Y.
Tucker, W. W. & C. F., Inc., Hartford, Conn.

Rotary Tables, Hand Feed
Stevens Inc., John B., 27 Cleveland Place, New York

Classified Finding Index

- Safety Stops**
Atlantic Co., Box 133, Sta. B., Brooklyn, N. Y.
- Saw Sharpening Machines**
Huther Bros. Saw Mfg. Co., Rochester, N. Y.
Wardwell Mfg. Co., Cleveland, O.
- Saws, Electric Hand**
Reed-Prentice Corp., Worcester, Mass.
- Saws, Metal Cutting Circular and Band**
Huther Bros. Saw Mfg. Co., Rochester, N. Y.
- Scraping Machines, Hand & Pneumatic**
Anderson Brothers Mfg. Co., Rockford, Ill.
- Screw Drivers, Electric**
Hiney-Wolf Machine Co., Cincinnati, O.
Vim Tool Co., 149 Broadway, New York
- Screw Driving Machines, Automatic**
Raynolds Machine Co., Massillon, Ohio
- Screw Machine Products**
National Acme Co., Cleveland, Ohio.
- Screw Machines, Automatic**
National Acme Co., Cleveland, Ohio.
New Britain Mch. Co., New Britain, Conn.
Townsend Mfg. Co., H. P., Hartford, Conn.
- Set-Up Appliances**
Standard Shop Equip. Co., Philadelphia, Pa.
- Shafts, Flexible**
Keller Mech. Eng. Corp., 88A Washington St., Brooklyn, N. Y.
Mall Tool Co., 7730 S. Chicago Ave., Chgo.
Stow Flexible Shaft Co., Philadelphia, Pa.
Strand Co., N. A., 8091 N. Lincoln St., Chgo.
- Shafts, Steel**
American Hollow Boring Co., Erie, Pa.
- Shaping Machines**
American Tool Works Co., Cincinnati, O.
Osborne & Sexton Machy. Co., Columbus, O.
Smith & Mills Co., Cincinnati
Springfield Machine Tool Co., Springfield, O.
- Shears, Alligator**
Canton Foundry & Machine Co., Canton, O.
- Shears, Hand**
Armstrong-Blum Mfg. Co. 241 N. Francisco Ave., Chicago
Hendley & Whittemore Co., Beloit, Wis.
Lewthwaite Machine Co., T. H., 311 E. 47th St., New York
Tucker, W. W. & C. F., Inc., Hartford, Conn.
Whitney Metal Tool Co., Rockford, Ill.
- Shears, Power**
Hendley & Whittemore Co., Beloit, Wis.
- Slotting Machines, Screw Head**
Stevens Inc., John B., 27 Cleveland Place, New York
- Spacing Washers**
Detroit Stamping Co., Detroit, Mich.
- Special Tools and Machinery**
Bradford Machine Tool Co., Cincinnati, O.
Foots Bros. Gear & Machine Co., 111 North Canal St., Chicago
Illinois Machine & Mfg. Co., LaSalle, Ill.
LaPorte Machine & Tool Co., LaPorte, Ind.
Reed-Prentice Corp., Worcester, Mass.
Stecher Co., Chan., 2452 N. Greenview Ave., Chicago
Superior Machine & Eng. Co., Detroit, Mich.
- Speed Reducers, Worm, Spur and Herringbone**
Foots Bros. Gear & Machine Co., 111 North Canal St., Chicago
Jones Foundry & Machine Co., W. A., 4460 W. Roosevelt Road, Chicago
Ohio Gear Co., Cleveland, Ohio.
- Spring Taper Sleeves**
Scherr Co., Geo., 144 Liberty St., New York
- Spring Winding Tools**
Superior Spring Wind. Tool Co., Milwaukee, Wis.
- Sprockets**
Foots Bros. Gear & Machine Co., 111 North Canal St., Chicago
Jones Foundry & Machine Co., W. A., 4460 W. Roosevelt Road, Chicago
Massachusetts Gear & T. Co., Woburn, Mass.
- Stamps, Steel and Rubber**
Schwerdtle Stamp Co., Bridgeport, Conn.
- Stencils, Brass and Oil Board**
Schwerdtle Stamp Co., Bridgeport, Conn.
- Stools and Chairs, Factory**
Chicago Wire Chair Co., 619 N. La Salle St., Chicago
- Stop Motions**
Atlantic Co., Box 133, Sta. B., Brooklyn, N. Y.
- Straightening Machines**
Springfield Machine Tool Co., Springfield, O.
Whitney Metal Tool Co., Rockford, Ill.
- Stud Setters**
Procurier Safety Chuck Co., 18 S. Clinton St., Chicago
- Tap Extractors**
Walton Co., Hartford, Conn.
- Tap Holders**
Bicknell-Thomas Co., Greenfield, Mass.
Procurier Safety Chuck Co., 18 S. Clinton St., Chicago
Scully-Jones & Co., 1901 S. Rockwell St., Chicago, Ill.
- Tapping Machines and Attachments**
Avey Drilling Machine Co., Cincinnati
Baker Brothers, Inc., Toledo, Ohio
Bicknell-Thomas Co., Greenfield, Mass.
Burke Machine Tool Co., Conneaut, Ohio
John H. Dorman, West New York, N. J.
Eastern Tube & Tool Co., Inc., 600 Johnson Ave., Brooklyn, N. Y.
Frew Machine Co., Philadelphia, Pa.
Hamm and Mfg. Co., Cleveland, Ohio
Leland Gifford Co., Worcester, Mass.
Procurier Safety Chuck Co., 18 S. Clinton St., Chicago
Rickert-Shafer Co., Erie, Pa.
Whitney Metal Tool Co., Rockford, Ill.
- Thread Dies**
Colven, J. M., Yonkers, N. Y.
- Thread Millers**
Scherr Co., Geo., 144 Liberty St., New York
Triplex Machine Tool Corp., 88 Church St., New York
- Threading Machines**
Rickert-Shafer Co., Erie, Pa.
- Threading Machines, Automatic, Stud**
Grant Mfg. & Mch. Co., Bridgeport, Conn.
- Threading Tools**
Armstrong Bros. Tool Co., 308 N. Francisco Ave., Chicago
- Tool Holders**
Armstrong Bros. Tool Co., 308 N. Francisco Ave., Chicago
Hagen, H. J., 30 Church St., New York
Western Tool & Mfg. Co., Springfield, O.

Classified Finding Index

Tool Racks
Chicago Wire Chair Co., 319 N. La Salle St.,
Chicago

Tools, Boring
Armstrong Bros. Tool Co., 308 N. Francisco
Ave., Chicago

Tools, Lathe and Planer
Armstrong Bros. Tool Co., 308 N. Francisco
Ave., Chicago

Tools, Machinists'
Armstrong Bros. Tool Co., 308 N. Francisco
Ave., Chicago

Trucks, Machine Shop
New Britain Machine Co., New Britain, Conn.

Tube Flanging Machines
Grant Mfg. & Mch. Co., Bridgeport, Conn.

Turntables
Canton Foundry & Machine Co., Canton, O.

Turret Tool Posts
Conradson, C. M., Green Bay, Wis.
Fay & Scott, Dexter, Maine

Universal Joints
American Tool Works, Inc., Hartford, Conn.
Boston Gear Works Sales Company, Norfolk
Downs, Mass.

Used and Rebuilt Machinery
American Tool Works Co., Cincinnati, Ohio
Armstrong & Bros. Co., 11 S. Atlanta, Ga.
Badger-Packard Mch. Co., Milwaukee, Wis.
Bath & Co., Cyril J., Cleveland, O.
Bennett Mch. Co., 50 Church St., New York
Bernstein & Co., Geo. M., 221 N. Elizabeth
St., Chicago
Bradley Machinery Co., Detroit, Mich.
Broadway Machinery Co., 211 Centre St.,
New York, N. Y.
Brown Machinery Co., St. Louis, Mo.
Brownell Machinery Co., Providence, R. I.
Carlson Machinery Co., Davenport, Iowa
Central States Machinery Co., 134 S. Clinton,
Chicago

Cincinnati Mch. & Supply Co., Cincinnati, O.
Clinton Mch. Co., 128 S. Clinton St., Chgo.
Co-Operative Mch. Co., Cleveland, Ohio.
Davis Machinery Exchange, Toledo, O.
Detroit Machinery Exchange, Detroit, Mich.
Donahue Steel Products Co., 74th and
Ashland Ave., Chicago

Eastern Machinery Co., Cincinnati, O.
Emerson & Co., Louis E., 1761 Eiston Ave.,
Chicago

Empire Machinery Exchange Co., Inc.,
Cleveland, Ohio
Easley Machinery Co., E. L., 551 Washington
Bldg., Chicago

Footer Machinery Co., Cleveland, O.
Harris Bros. Co., 35th & Iron Sts., Chicago
Hill, Clarke & Co., 649 W. Washington
Bldg., Chicago

Howarth Co., C. C., Detroit, Mich.
Hyman & Sons, Joseph, Philadelphia
Indianapolis Mch. & Supply Co., Indian-
apolis, Ind.

International Mch. Co., Detroit, Mich.
Johnson & Sons Machinery Co., Wm. C.,
St. Louis, Mo.

Jones Machine Tool Co., Cincinnati, O.
Kinney Co., E. A., Cincinnati, O.
Klauber Mch. Co., E. L., St. Louis.

Little Co., W. F., Cleveland, O.
Lucas & Son, Inc., J. L., Bridgeport, Conn.
McCabe Lathe & Machinery Corp., J. J.,
149 Broadway, New York

McDonald Machinery Co., St. Louis
Manning, Maxwell & Moore, Inc., 27 No.
Jefferson, Chicago

Marr-Galbreath Mch. Co., Pittsburgh, Pa.
Midland Equipment Co., 400 S. Clinton St.,
Chicago

Midwest Egypt. Co., 324 W. Lake St., Chgo.

Used and Rebuilt Machinery—Cont.
Mid-West Machine Tool & Supply Company,
Davenport, Iowa

Miles Machinery Co., Saginaw, W. S., Mich.
Modern Machinery & Supply Co., Los
Angeles, Calif.

Molitor Mch. Co., Chas., 118 S. Clinton St.,
Chicago

Morey and Co., Inc., 408 Broome St., N. Y.
Morris Machine Tool Co., Cincinnati, Ohio
Mott & Merryweather Machinery Co.,
Cleveland, O.

Nelson Machinery Co., Green Bay, Wis.
Norton-Broadway Mch. Co., Cincinnati, O.
O'Brien Machinery Co., Philadelphia

Osborne & Sexton Mch. Co., Columbus, O.
Palmer-Edwards Co., Flint, Mich.
Randle Machinery Co., Cincinnati, O.

Reed-Prentice Corp., Worcester, Mass.
Reeve-Fritts Co., 558 W. Washington, Chgo.
Rentschler & Co., J. F., 607 W. Washington
Bldg., Chicago

Reliance Mch. Sales Co., Pittsburgh, Pa.
Riverside Machinery Depot, Detroit, Mich.
Rosenfeld Mch. Co., 342 W. Lake St., Chgo.

Russell Machine Co., Pittsburgh, Pa.
Scott-Bansbach Mch. Co., 130 S. Clinton,
Chicago

Selfrent-Elsard Machinery Co., Dayton, O.
Simmons Machine Tool Corp., Albany, N. Y.
Stockman, John A., 240 W. 25th St., N. Y.

Stoehr Machinery Co., A. M., 418 Mid-City
Bank Bldg., Chicago
Strafer Machinery Co., Jersey City, N. J.

Strong, Carlisle & Hammond Co., Cleveland
Sun Machinery Co., Newark, N. J.
Syracuse Supply Co., Syracuse, N. Y.

Taylor-Hall Welding Corp., Worcester, Mass.
Toledo Machinery Exchange, Toledo, Ohio.
Tubor-Velick & Co., 630 W. Lake St., Chgo.

United Mch. & Supply Co., St. Louis
Wertman Mch. Co., M. A., Cleveland, O.
West Penn Machinery Co., Pittsburgh, Pa.

White Mch. Co., A. D., 108 N. Jefferson
St., Chicago
Wigglesworth Machinery Co., Boston, Mass.

Winterer, Herman L., Philadelphia
Vises Grips
Pitts & Kitts Mfg. & Supply Co., 91 Seventh
Ave., New York

Vises, Drilling Machine
Armstrong-Blum Mfg. Co., 341 N. Francisco
Ave., Chicago

Armstrong Bros. Tool Co., 308 N. Francisco
Ave., Chicago
Barker & Co., Wm., Covington, Ky.

Marsh Machinery Co., A. R., Cleveland, Ohio
Martin Tool & Die Works, J. E., Springfield, O.
Sheldon Machine Co., 3253 Cottage Grove
Ave., Chicago

Vises, Machinists'
New Britain Machine Co., New Britain, Conn.
Sheldon Machine Co., 3253 Cottage Grove
Ave., Chicago

Western Tool & Mfg. Co., Springfield, O.
Vises, Milling Machine
Hagen, H. J., 30 Church St., New York

Hartford Special Mch. Co., Hartford, Conn.
Sheldon Machine Co., 3253 Cottage Grove
Ave., Chicago

Stevens Inc., John B., 27 Cleveland Place,
New York

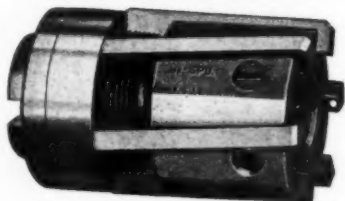
Vises, Shaper
Hagen, H. J., 30 Church St., New York
Sheldon Machine Co., 3253 Cottage Grove
Ave., Chicago

Wood Working Machinery
Frew Machine Co., Philadelphia, Pa.
Hendley & Whittemore Co., Beloit, Wis.

New Britain Machine Co., New Britain, Conn.
Porter-Cable Machine Co., Syracuse, N. Y.

Worms
Massachusetts Gear & T. Co., Woburn, Mass.
Jones Foundry & Machine Co., W. A., 4450
W. Roosevelt Road, Chicago

"X-L" Adjustable Inserted Spiral Blade Shell and Machine Reamer



Reamers made with Left Hand Angle Cutting Blades do not dig in, and all chatter is eliminated. This means free, clean cutting, smooth holes, and increased production.

The range of expansion is from .100" in the smaller sizes to .150" in the larger sizes. Made with High Speed Steel Blades.

This is a real production reamer. The left hand helical flutes cut fast and clean. Made only in high speed steel. Made with straight and tapered shanks.

All Sizes Carried in Stock

Catalog on Request

The Schellenbach-Hunt Tool Co.

118 Opera Place, Cincinnati, Ohio

Agents: E. E. Fletcher, 6007 Euclid Ave., Cleveland, Ohio

Used and Rebuilt Machinery Section

Lists of Used and Rebuilt Machinery, either For Sale, Wanted, or For Exchange, set in uniform style, will be published in the Classified Section at the rate of 60 cents a line across the page, each issue, plus \$3.00 for name and address. Minimum charge, \$6.00. No display permitted.

Write directly to those offering the machines for sale, for prices and full descriptions. If what you seek is not advertised, use the blank enclosed to make known your wants in either new or used machinery, and the publisher will pass them along to the advertisers.

FOR SALE BY

Bradley Machinery Co., 424 E. Woodbridge St., Detroit, Mich.

Believe it or not.

Grinder, No. 70 Heald, clutch in head.

Jig borer, No. 4 Swiss, 90% new.

Lathe, 20"x8' Hendey, taper attachment.

Lathe, 20"x10' Hendey, taper attachment, draw bar and collets.

Lathe, 24"x10' Hendey, taper attachment, draw bar and collets.

Shaper, 16" G. & E. high duty, single pulley drive.

All equal to new.

FOR SALE BY

**Indiana Machinery Company
Taylor Street & Nickel Plate Railroad, Fort Wayne, Ind.**

Drill, Avey 3-spindle, ball bearing.....\$350.

Drill, Cincinnati-Bickford 28".....350

Lathe, 12"x6' Springfield.....180.

Lathes, 22"x12' Niles loose change, heavy, 5 of these.....225.

Lathe, 24"x14' Niles loose change, heavy.....300.

Milling machine, Bilton.....275.

Planer, Niles heavy, 48"x48"x14' table, 2 heads.....750.

Radial drill, Niles, 6' full universal, single pulley, gear box drive.....750.

FOR SALE BY

A. M. Stoehr Machinery Co.

Air compressor, Chicago Pneumatic, 22x14x16, with 150 h. p. slip ring motor.

Balancing machine, Gisholt precision.

Bolt cutter, 3-sp. Acme, 1" cap.

Drills, 6' American triple purpose.

Hammers, power (7).

Keyscater, No. 2 Mitts & Merrill.

106 S. Jefferson St., Chicago, Ill.

Miller, No. 2 1/2 Rockford plain, vertical attachment.

Presses, Michigan Nos. 4, 5 & 65.

Punch, & shear, No. 5 Southwark, E. F. Cleveland and others.

Punch & riveters, Rock River & Kling.

Separators, oil, No. 3 National.

Wire straighteners, up to 3/4" cap.

FOR SALE BY

Carlson Machinery Co., Inc.,

Boring mill, 36" Bullard, 2 heads.

Boring mill, 60" Niles, 2 heads.

Grinder, 24" Inger, cutter, tub type.

Grinder, 10x20 Landis universal.

Lathe, 7"x32" Pratt & W. bench.

Lathe, 8"x38" Rivett bench, 9 collets.

Lathe, 11"x3' Blount speed.

Lathe, 14"x6' Lodge & Shipley.

Lathe, turret, 1 1/2" cap., bar feed, with 30 collets.

Davenport, Iowa

Miller, No. 1 Milwaukee universal, dividing hd., vertical attachment, slotting attachment, rotary table.

Planer, 16"x4' Hendey.

Press, No. 1 Marshalltown o. b. i.

Press, C-1 Ferracute o. b. i.

Press, No. 30 Crosby.

Press, No. 83 Crosby foot kick pr.

Press, No. 2 Springfield straightening

USED AND REBUILT MACHINERY

FOR SALE BY

Arthur P. Gockel,

1817 E. 26th St., Cleveland, Ohio

Bending rolls, cap. 10' of 16 gauge.
Bulldozer, No. 7 W. W., hi frame m.d.
Furnace, 10x30x96" long, gas or oil.
Plate planer, 10' long, 4" cap.

Press, Cleve., ad. bed, 30 tons cap.
Press, s. s., 48" bet. hous. 7" shaft.
Press, s. s., 18" bet. hous. 4 1/2" shaft.
Square shear, Ohi cap. 10' of 16 ga.

Let Art Gockel help you solve your production and equipment problems.

FOR SALE BY

Davis Machinery Exchange,

1-3-5 So. St. Clair St., Toledo, Ohio

Air compressor 4 1/2x5 Ingersoll-Rand.
Air compressor, 6x6 Chicago pneumatic, tank.

Air compressor, 6x5 Ingersoll-Rand.
Air compressor, Gardner, direct connected LeRoy engine.

Bolt threaders, 1 1/2" and 2" National.
Boring mill, 24" Bullard vertical, new era head.

Brake, 8' Chicago, cap. 18 ga.
Drill, 20" Barnes camel back.

Drill, 20" Champion, b. g. & p. f.
Drill, 20" Barnes, 4-spindle.

Drill, Leland-Gifford high speed, motor drive.

Drill, No. 310 Baker hvy. dnty, (2).

Drill, 3 1/2" Carlton radial, g. b., s. p. d.

Drill, 4' Hammond hinged arm radial, tapping attachment.

Drill, 3' gang radial, tapping attachment, universal table.

Drill, 16" Kern hi-speed.

Drill, 2-spindle Allen sensitive.

Drill, 4-spindle Foote-Burt rail.

Drill, 6-sp. Nat. Acme horizontal.

Forming rolls, 66" Pettingell hand.

Grinder, No. 2 Gardner disc, comp.

Grinder, No. 1955" Bealy vert. disc.

Grinder, No. 4 Gardner disc comp.

Grinder, No. 4 Gardner disc, 15 h. p. motor drive.

Grinder, Van Norman valve, m. dr.

Grinder, No. 1 Greenfield plain, 5"x13 1/2" hydraulic feed.

Grinder, 8"x18" Ott plain.

Grinder, 10"x36" Landis pl. self-con.

Grinder, No. 60 Heald cylinder.

Grinder, Walker universal.

Groover, 42" Toledo power.

Hammer, 8" Schuster riveting.

Hammer, No. 1-B High Speed riveting, m. d.

Keyseater, No. 0 Mitts & Merrill.

Keyseater, No. 2 Baker.

Keyseater, No. 2 Davis.

Lathe, 19"x10" Sidney q. c. g.

Lathe, 9"x18" Porter-Cable.

Lathe, 14"x6" Monarch q. c. g., chuck

Lathe, 16"x6" Monarch q. c. g., chuck

Lathe, 16"x8" Oliver q. c. g., engine.

Lathe, 16"x8" Monarch l. c. g., eng.

Lathe, 22"x9" National q. c. g., engine, geared hd., single pulley dr.

Lathe, engine, 18"x7" Lehmann, q. c. g., chuck.

Lathe, 18"x8" Perfection q. c. g., eng.

Lathe, engine, 24"x12" Greaves-K., l. c. g.

Mill, No. 1 Cincinnati universal.

Mill, No. 2 Rockford universal, index head, complete.

Mill, 1 1/2"-A B. & S. universal, s. p. d.

Mill, No. 3 Brown & Sharpe univ.

Mill, No. 1 1/2 Cincinnati plain, all geared feeds.

Mill, No. 2M Potter & J. horizontal.

Mill, A. B. Becker vertical.

Mill, No. 3 Becker vertical.

Mill, No. 2 Brown & Sharpe plain.

Mill, No. 6 Whitney hand.

Mill, No. 12 B. & S. production, (2).

Miller, Fox hand.

Miller, Garvin hand.

Milling and drilling machine, No. 1 1/2 Knight.

Oil separator, American.

Pipe threader, 4" Merrill, full set of dies.

Planer, 24"x24"x6' Lodge & D. 1 hd.

Press, arbor, No. 28 Atlas.

Press, arbor, No. 3 Greenerd.

Press, No. 51 Toledo arch, grd., 7" str.

Press, No. P1 Ferracute s. b.

Press, No. P2 Ferracute s. b.

Press, No. 4 Adriance o. b. i.

Press, No. 4 Toledo o. b. i., flywheel.

Press, No. 5 1/2 Consolidated o. b. i.

Press, No. 6 Bliss horiz. heading.

Press, John Evans multiple shearing, punching or trimming.

Punch and trimmer, John Evans double end.

Riveter, Eveland electric.

Rolls, John Evans large tapering.

Rolls, 60" Hendley & Whittemore power forming, 14 gauge.

Screw machine, No. 1 Warner & S.

Screw machine, No. 1 Garvin hand.

Screw mche., 1 1/2" Pratt & Whitney.

Shaper, 10" Gould & E. crank.

Shaper, 16" American crank b. gr.

Shaper, 20" Mattison crank, b. g.

Shaper, 24" G. & E. crank, b. g.

Shaper, 24" Milwaukee cr., bk. grd.

Shear, No. 135 J. M. Robinson pwr. square, cap. 36"x18 gage.

Welder, 13 k. v. a. Taylor spot, 440 v.

Welder, 10 k. v. Federal spot, 220 v.

Welder, 50 k. w. Taylor spot, 440 v.

USED AND REBUILT MACHINERY

FOR SALE BY

West Penn Machinery Company

1208 House Building,

Pittsburgh, Pa.

Air comp., 6"x8" Curtis, 49 c. f.
 Air comp., 8"x8" Bury "BB", 79 c. f.
 Air comp., 8"x8" I.-R. ER-1 138 c. f.
 Air comp., 10x10 I.-R. N-E-1 179 c. f.
 Air comp., 12x10 I.-R. ER-1 378 c. f.
 Air comp., Bury, duplex, 815 c. f.
 Automatic, No. 55 Nat. 4-spindle.
 Bolt cutters, 1 1/2" Landis, dbl head.
 Bolt cutters, 1 1/2" Landis, 3hd., m. d.
 Boring mills, 36" Bullard, side head.
 Boring mill, 60" Gisholt, r.p.t., m. d.
 Boring mill, 84" Poole, 2 heads.
 Boring mill, 96" Niles 2 heads.
 Boring mill, 25" Sellers, m. d.
 Boring mill, horiz. 4-spd., Newton.
 Boring mill, horiz. 3 1/2" bar, Rochester.
 Boring mill, horiz. 6" bar Niles.
 Brake, 48"x3/16" Dreis & Krump.
 Brake, 6"x16 ga. Robinson.
 Brake, press type, 10' 6" Ohl, 5/16".
 Bulldozers, Nos. 25 and 28 W. & W.
 Drills, 14" to 38".
 Drill, No. 3 Colburn.
 Drills, mult. 4 and 6-spd. H. & W.
 Drill, mult., No. 5 Fox, 10-spindles.
 Drill, radial, 5' Prentice, b. d.
 Drill, radial, 6' Prentice, s. p. d.
 Drill, radial, 10' Bausch, m. d.
 Flanger, McCabe, 4" capacity.
 Gear cutters, spur and bevel.
 Gear cutter, 48" Newark, b. d.
 Gear cutter, 108" Cincinnati, m. d.
 Gear hobber, 78" S. & S. m. d.
 Gear planer, 24" Gleason, bevel.
 Grinder, radial, 14", 220 v. 3-60.
 Grinder, 16"x72" Landis crankshaft.
 Grinder, plain, 12"x72" Norton.
 Grinder, planer type, 51" Springfield.
 Grinder, face, 86" Bridgeport.
 Grinder, surface, 14" Arter.
 Grinder, surface, No. 16 Blanchard.
 Grinder, universal, No. 2 Landis.
 Grinder, universal No. 3, 30"x42".
 Hammer, 65-lb. Champion, upright.
 Hammer, 80-lb. Bradley, cush. helve.
 Hammer, 150-lb. Dupont, upright.
 Hammers, Nos. 2-B, 3-B, 4-B Nazel.
 Hammers, steam, 600 lb. to 6000 lb.
 Keyseater, No. 2 Mitts & Merrill.
 Lathes, 12" to 60".
 Lathe, 16"x6" Hendey.
 Lathe, 16"x6" LeBlond, q. c. g.
 Lathe, Lo-Sw., 34"x60" Fitchburg.
 Lathe, brass, 18"x6" Fox.
 Lathe, roll, 50" United, m. d.
 Lathe, turret, 3"x36" J. & L.
 Lathe, turret, No. 4 W. & S.
 Lathe, turret, No. 6 W. & S.
 Lathe, turret, 24" Steinle, 6 1/2" hole.
 Lathe, turret, No. 4 Foster.
 Miller, plain, No. 3-Y Brown & S.
 Miller, slab, Newton, C-37.
 Miller, univ., No. 4 B. & S. 12" d.h.
 Pipe mche., 3" Jarecki, dies, b. d.

Pipe machine, 8" Williams, m. d.
 Planer, 48"x42"x12' Cincinnati, 2hds.
 Planer, 56"x56"x16' Cin. rev. m. d.
 Planer, 96"x96"x18' Ridgway, 4 hds.
 Planer, o. s. 96"x72"x26' D. & H.
 Planer, rotary, 48" Niles, m. d.
 Press, hyd., 50-ton Lourie.
 Press, No. 30 Bliss o. b. l.
 Press, geared, No. 34 Toledo.
 Press, No. 374 Bliss, s. a., 6" stroke.
 Press, No. 784 Bliss, t. r. 12" stroke.
 Press, No. 12-E Bliss, 143"x54".
 Press, 610-F Niagara, 64"x78".
 Press, Toledo, dbl crk. 2" stroke.
 Press, No. 94-P Toledo, 42"x196".
 Press, wheel, 150-ton Caldwell.
 Press, wheel, 400-ton Niles.
 Pump, Gould, cent. 400-gals.
 Punch, hor., Cleveland, 1" thru 1".
 Punch & sh., 30" Rock-River 1 1/2".
 Punch, No. 1 L. & A. 30" thr., 1 1/2"-1".
 Punch, No. 5 H. & J. 2 1/2"-1 1/2", m. d.
 Riveter, Hanna, 36", 70-ton.
 Riveter, stake, L. & A. 5/16".
 Riveting hammer, No. 54 high speed.
 Rivet spinner, 8" Grant, 6" throat.
 Rolls, angle bend., 2"x2"x3" Bertsch.
 Rolls, angle bend. 3"x3"x3" Buffalo.
 Rolls, bending, 42"x14 ga. Bertsch.
 Rolls, bending, 54"x3" Cincinnati.
 Rolls, bending, 10"x1" Cleveland.
 Rolls, bending, 12"x1" H. & J.
 Saw, metal band, 6" Millband.
 Saw, metal band, 26" Crescent.
 Saw, frict. Model 1-A Hunter, 24".
 Saw, friction, Nos. 2 & 3 Ryerson.
 Saw, cold, 48" Newton.
 Saw, hot, 54" Mesta sliding frame.
 Sanderling, 11' tractor type.
 Seamer, No. 308 Toledo.
 Shaper, 16", 20" & 24" Gould & E.
 Shear, angle, L. & A., 6"x8"x1 1/2".
 Shear, alligator, Garrison, 14".
 Shear, alligator, No. 5 Canton, 3" sq.
 Shear, alligator, United 6"x6".
 Shear, bevel, Lennox 1 1/2".
 Shear, circle, No. 1104 Bliss.
 Shear, 20"x16" ga. Bliss power.
 Shear, 36"x16 ga. Niagara, b. d.
 Shear, sq. 72"x14 ga. Bertsch, b. d.
 Shear, 96"x1 1/2" Stoll, m. d.
 Shear, sq., 10"x1 1/2" Morgan, 24" gap.
 Shear, 12"x14 ga. Peerless, 954 new.
 Shear, plate, 10"x1 1/2" H. & J. No. 4.
 Shear, plate, United, 156"x1 1/2".
 Shear, rotary, No. 6 Quickwork.
 Straightening rolls, Brightman 1"-4".
 Straight'r, 48" United, 16 ga. 13 rolls.
 Straightener, Nat. 60"x14 ga. 17 rolls.
 Straightener, beam, No. 4 H. & J. m. d.
 Swaging machine, No. 3 Langelier.
 Swaging machine, No. 5 Langelier.
 Upsetters, 1" to 5".

USED AND REBUILT MACHINERY

FOR SALE BY

Badger-Packard Mch. Co., 133-9 W. Water St., Milwaukee, Wis.

Air compressor, 8x8 Chicago Pneumatic with tank, unloader and gauges.	\$275.
Drill, 17-D Moline Hole-Hog, 4-spindle.	170.
Drill, 6-spindle Acme, cotter pin with chucks.	225.
Engraving machine, 1-D Gorton motor drive.	270.
Gear cutter, 36" Gould & Eberhardt spur.	325.
Gear cutter, 36" Brown & Sharpe No. 3, spur.	425.
Hoist, electric 2000 lb. "MAC" 3 phase 60 cycle 220 volt.	95.
Keyseater, No. 2 Mitts & Merrill with lot of bars and cutters.	235.
Lathe, brake drum, 26" swing, in fine shape.	60.
Lathe, Fox Monitor type.	50.

FOR SALE BY

Reliance Machinery Sales Company

1405 Brighton Road,

N. S. Pittsburgh, Pa.

Air compressor, 5"x8" m. d.
 Air compressor, 20"x18" m. d.
 Automatic, 3" Gridley, cone drive.
 Automatics, Nos. 52 & 53 Acme
 Bolt cutters, 4", 4", 1-1/2 single head.
 Boring mill, D. & H., 3 1/2" bar.
 Boring mill, 25" Sellers, 2 heads, full motor drive.
 Boring mill, 34" Colburn.
 Boring mill, 51" Bullard, 2 heads.
 Bulldozers, No. 27 Williams-White, motor drive, A 1 condition.
 Buffers, 10 h. p., 220-3-60-3600.
 Broach, No. 3 LaPointe.
 Centering mche., Cadillac dbl. end.
 Chain hoists, new, 1/2 ton \$40.
 Chain hoists, new, 1 ton \$50.
 Drills, 10"-12" bench type, m. d., new.
 Drills, 15, 20 21" floor type, b. d. or m. d.
 Drills, 20" plain feed, (4).
 Drills, 20" and 21" back geared, new.
 Drills, 22", 24", 28" sliding head.
 Drill, 36" T. & F. sensitive radial.
 Drill, P. & W. multiple, 12-1" spdl.
 Drill, No. 25 Foote-Burt hvy. duty.
 Gear cutter, No. 1 Bilton.
 Grinder, 5 h. p. U. S., 220-3-60.
 Grinder, 7 1/2 h. p. Ransom, 220-3-60.
 Grinder, Oliver drill, 4" cap., m. d.
 Grinder, 12"x24" Modern plain.
 Grinder, No. 1 Norton univ. cutter.
 Grinder, No. 1 Univ. tool & cutter.
 Grinder, No. 2 1/2 Bath universal.
 Grinder, No. 16 Besly disc.
 Hammers, No. 2-A, h. d. Hi-Speed, m. d., 3 ph., 60 cy., 220 v., (4).
 Hammer, No. 1AA High Speed, m. d.
 Hammers, 60 lb. Bradley helve.
 Hoists, electric, 1 & 2 ton, d. c. mtrs.
 Keyseater, No. 3 Baker, cap. 3".
 Lathe, 14"x8" Rockford q. c. g. d. b. g.
 Lathe, 16"x6" Blount patternmakers.
 Lathe, 18"x6" Springfield brass.

Lathe, 12"x10" Davis tool rm., q. c. g.
 Lathe, 14"-28" Fay & Scott gap.
 Lathe, 18"x10" W.-B., g. h., s. p. d.
 Lathe, 27"x18" Reed, bargain.
 Lathe, 48"x19" 8" Betts-Bridgeford.
 Lathe, 30"x16" L. & S., q. c. g.
 Lathe, 36"x25" W. P. Davis m. d.
 Lathe, 36"x34" W. P. Davis, m. d.
 Lathe, 18" Libby turret, a. p. d.
 Lathe, 21" Gisholt turret, (2).
 Millers, No. 0 Cincinnati plain, (2).
 Millers, No. 1 Cleveland plain, (2).
 Miller, No. 2A Milwaukee plain.
 Millers, No. 2 Ohio plain, (2).
 Miller, No. 3 Cincinnati plain, m. d.
 Miller, No. 4 Hendey plain, s. p. d.
 Pipe mche., E. C. & B., 2 1/2" to 8".
 Pipe machine, Merrill, 2 1/2" to 12".
 Pipe machine, new 2-P, 2" Williams.
 Planer, 22"x22"x50" New Haven 1hd.
 Planer, 24"x24"x8" Powell, 1 head.
 Planer, 30"x30"x8" Powell, 1 head.
 Planer, 32"x33"x12" Cincinnati, 2 hds.
 Press, No. 3 Adriance o. h. i., 3 1/2" str.
 Press, Ferracute DD2, o. b. i., cam.
 Presses, 3P Ferracute (2).
 Presses, Nos. 19, 20 & 21 Bliss, new.
 Presses, Nos. 3, 4, 5 and 6 Consolidated, new.
 Presses, No. 20 Bliss, 3" stroke.
 Press, 60 ton hydraulic arbor.
 Punch, Wickes, 48" thrt., cap. 1 1/2"x1".
 Radial drill, 4' Fosdick s. p. d., g. b.
 Radial drill, 4' American cone drive.
 Radial drill, 5' Western s. p. d., g. b.
 Seamers, Bliss, Leffler & Max Ams.
 Shapers, 16", 24" Gould & E., b. d.
 Shapers, 24" & 36" G & E., m. d., b. g.
 Shapers, 16" American b. g.
 Shear, 10"x14 ga. Bertsch, b. d.
 Shear, No. 0 H. & J. gullotine, b. d.
 Shear, No. 103 Bliss circle.
 Shear, Niagara circle No. 208-A.

Our warehouse is full of bargains. What have you for sale?

USED AND REBUILT MACHINERY

FOR SALE BY

Scott-Banabach Machinery Co., 130 So. Clinton St., Chicago, Ill.

Auto. screw mach., 1½" Gridley 4 spindle model F.....	\$ 950.
Auto. screw mach., 2½" Gridley 4 spindle model F.....	1,500.
Auto. screw mach., Cleveland, 1½" Model A.....	150.
Auto. screw mach., Cleveland 3½" Model A, square pan.....	750.
Auto. screw mach., Cleveland 3½" Model A, square pan.....	850.
Bolt cutter, 2" D & H., double head.....	300.
Drill, 21" Cincinnati sta. head, with tapping attachment.....	200.
Drill, 24" Rockford sliding head, back geared and power feed.....	150.
Drill, 26" Aurora sliding head, back geared and power feed.....	250.
Drill, 28" Superior, sliding head, back geared and power feed.....	325.
Drill, 1-spindle Allen h. s., b. b. 14" with pump.....	175.
Drill, 1-spindle No. 3 Avey with tapping.....	275.
Drill, 4-spindle 14" Avey high speed, b. b., old style.....	300.
Drill, radial, 3" American sensitive.....	200.
Drill, 20"—2-spindle Hoefler power feed.....	250.
Grinder, 24" Diamond disc, with disc and ring wheel.....	300.
Grinder, 26" Ransom disc, 2 tables.....	350.
Grinder, No. 65 Heald, with fixtures, b. b. spindle.....	900.
Grinder, No. 1½ Cincinnati cutter and tool.....	450.
Grinder, No. 2 Norton universal cutter & tool, p. f.....	550.
Grinder, No. 11 B. & S. plain 6"x32".....	750.
Grinder, 12"x48" Modern plain, self contd., c/s.....	750.
Grinder, 12x12x48 Springfield Brandes mag. chuck & segment wheel.....	2,000.
Hammer, 50 lbs., No. ½ Standard drop.....	150.
Hammer, No. 5A High Speed riveting.....	400.
Lathe, 14x6 Hendey q. c., taper and draw-in.....	450.
Lathe, 14"x8" Flather, quick change, taper and chuck.....	250.
Lathe, 16x8 South Bend with gap 24" standard change, new.....	550.
Lathe, 18"x9" Chard semi-quick change gear.....	400.
Lathe, 19"x11" Chard, semi-quick change gear.....	425.
Lathe, 22"x12" Davis quick change, d. b. g.....	800.
Miller, Whitney, Standard and U. S., hand.....	125.
Miller and drill, No. 1 Knight.....	200.
Miller, No. 1 Garvin universal, fully equipped.....	600.
Miller, No. 3B B. & S. heavy duty, all geared head, s. p. d.....	2,000.
Miller, Briges, G. & E. manufacturing, 16".....	200.
Miller, No. 5 Becker vertical, no rotary.....	500.
Miller, No. 7 Becker, Lincoln type.....	150.
Miller, No. 21 Garvin power feed, oil pump.....	150.
Miller, Hendey, Lincoln type.....	100.
Miller, No. 12 Brown & Sharpe production type.....	200.
Miller, Ingersoll slab, 42"x36"x9".....	1,750.
Oil separator, National, about ½ bushel.....	75.
Planer, 24"x24"x6" Cincinnati, 1 head.....	500.
Planer, 24x24x8 Fitchburg, 1 head.....	400.
Planer, 32x32x8 Pond, 1 head.....	750.
Planer, 36"x36"x12" Cincinnati with 2 heads.....	1,500.
Press brake, 16" Ohl power, No. 10 gauge.....	2,000.
Shear, No. 772 Niagara 3/16x72", m. d.....	750.
Shear, L. & A. No. 2 cap. 3/16"x16" with gap.....	2,500.
Saw, 6x6 Peerless h. s., d. c. motor ½150, a. c. motor.....	175.
Screw machine, P. & W. 1x4, complete.....	150.
Shaper, 16" Steptoe, crank, back geared, vise and c/s.....	425.
Shaper, 16" Smith & Mills, back geared vise and countershaft.....	450.
Shaper, 20" Steptoe, crank, back geared, vise and c/s.....	600.
Shaper, 20" Cincinnati, crank, back geared, vise and c/s.....	850.
Shaper, 20" Ohio, crank, back geared, vise and c/s, nearly new.....	1,000.
Shaper, 25" Steptoe, crank, back geared, vise and c/s.....	750.
Shaper, 24" Rockford universal combination.....	1100.
Slotter, 12" Putnam universal.....	1,000.
Turret lathe, 24x10" Milholland, for chuck and bar work.....	750.
Turret lathe, No. 7 Foster for chuck and bar work.....	750.
Turret lathe, No. 2A Warner & Swasey, with chucking equipment.....	2000.
Turret lathe, 24" Steinlee, 4" hole, side carriage.....	700.

USED AND REBUILT MACHINERY

FOR SALE BY

The Reeve-Fritts Co., 558-560 W. Washington Blvd., Chicago, Ill.

Cut-off mch., No. 4 Nutter & Barnes.
Die filer, No. 3 Barry.
Drill, 16" Sipp b. b.
Drill, 20" Champion b. g. p. f.
Drill, 4-spd. Foote-Burt 1" cap.
Drill, 4 spindle Fox, 1" cap.
Drill, 6 spindle Henry & W. h. s.
Gear shaper, 5"x36" Fellows.
Grinder, Bryant No. 6A chucking.
Grinder, 25" Buffalo knife.
Grinder, disc, 20" Ransom.
Lathe, 9x20" Porter-Cable prod.
Lathe, 12"x5" Pratt & Whitney.
Lift truck, Revolver Type H.

Miller, Cataract bench.
Miller, No. 3 Chicago hd. & power.
Miller, No. 1 Kemp Smith universal.
Miller, No. 20 Kemp Smith univ.
Pipe mach., No. 6 Merrell.
Planer, 24"x24"x6" Rockford.
Planer, 24"x24"x6" American.
Press, No. 0 LaSalle bench.
Press, No. 2 S. & S. o. b. i.
Screw machine, No. 1 B. & S. auto.
Shear, No. 14 Pettingell rotary.
Turret lathe, 24"x26" Pratt & Whitney.
Welder, spot, Taylor 1" cap.

FOR SALE BY

Wm. C. Johnson & Sons Machinery Co.,

1211-1223 N. 12th St.,

St. Louis, Mo.

LATHES.

15"x10" Cisco q. c. g.
16"x10" Sidney q. c. g.
18"x 8" American q. c. g.
14"x10" LeBlond.
24"x12" Boye & Emmes lathe q. c. g.

27"x13" Lehman geared hd. m. dr.
28"x16" Lodge & Shipley, q. c. g.
30"x13" H. S. & G.
40"x20" Wickes q. c. g., taper att.
60"x12" New Haven turning.

MILLERS.

No. 33 Kemp Smith 60" feed.
No. 1 Cincinnati universal.
No. 4 Cincinnati plain.

No. 3 Rockford hand.
Hendey Lincoln.
No. 2 LeBlond universal.

PRESSES.

No. 14" Bliss toggle press.
No. 34" Bliss toggle press.
No. 25 Toledo double acting cam drawing, geared.

No. 14" Bliss toggle press.
No. 24 Toledo double acting cam drawing, fly wheel.

PIPE & BOLT THREADING MACHINES.

3" Bignall & Keeler pipe machine.
6" Jarecki pipe machine.
8" Williams pipe machine.

12" Bignall & Keeler pipe machine.
14" Standard bolt threader.
3" Acme bolt threader.

SCREW AND TURRET MACHINES.

No. 6-A Potter & Johnston. (2)
No. 5-A Potter & Johnston.
2" Warner & Swasey hollow hex.
No. 6 Warner & Swasey cone head.

3"x24" J. & L., geared head.
3"x26" J. & L., geared head.
34" Acme flat turret (2).

BORING MILLS.

34" Gisholt turret head, motor dr.
10" Niles vertical, 2 heads.
42" Niles, 2 heads.
54" Niles, 2 swivel heads.

60" Morton Poole, 2 swivel heads.
No. P. & H. boring and drilling machine.

PLANERS.

24"x24"x8" Pond.
32"x32"x14" Flather.

48"x30"x16" Gray.
42"x42"x26" Wheeler.

SHAPERS.

24" Barker crank.

DRILLS.

22" Barnes back geared.
25" Barnes back geared.
32" Prentice sliding head.

3" arm Drees radial.
4" arm Bickford.

MISCELLANEOUS.

Automatic, 24" Brown & Sharpe.
Furnaces, cyanide hardening.
Gear cutter, 30" Whiton bevel.
Gear cutter, 36" Cincinnati.
Grinder, 14"x66" Landis.

Punch & shear, 28" throat, 1" in 1".
Shear, Lennox, rotary bevel.
Swager, No. 1 Dayton.
Swager, No. 6 Aetna.

USED AND REBUILT MACHINERY

FOR SALE BY

Marr-Galbreath Machinery Co.,

58 Water St., Pittsburgh, Pa.

Air comp., 4½x4½ Curtis, 24 cu. ft.
Blowers, Root No. 4, 500 c. p. m.
Blowers & exh., 6, 8, 9 & 16" opening.
Bolt cutters, 1½" Landis, 2 heads.
Bolt cutters, 1½" Morgan, 2 heads.
Boring mill, floor type, 6" bar.
Brake, 6" D & K. 18 ga. hand power.
Brake, 8"x18 ga. Chicago, hand.
Brake, 8"x12 ga. power, Chicago.
Burnishing barrel, 24"x16", glass lined
Cold header, 1" W-F., solid die.
Cold header, 3" W-F., solid die.
Cold saws, Nos. 11½ and 12 Higley.
Draw bench, Oliver, 6', 275 lb.
Drill, portable electric, 1" capacity,
1/60/110.
Drill, 20" Prentice, plain.
Drill, 20" Superior, b. g., s. h.
Drill, radial, 30" Taylor & Fenn.
Drill, radial, 10' for m. d., (cheap).
Drills, radial, 5' and 7' Prentice.
Drills, radial, 3' & 3½' Bickford.
Furnace, rotary annealing, 12"x8".
Furnace, gas hardening, 10"x6"x12".
Furnaces, oil tempering, 10"x10"x10".
Gear and pinion cutter, No. 3 Sloan.
Grinder, No. 1 Norton universal
tool and cutter.
Grinder, No. 11 B & S., plain.
Grinder, surface, No. 1W & M., m. d.
Grinder, 12" Bristol, rotary surface.
Hack saws, 8" Atkins, mtr. 1/60/220.
Hack saws, 8" Economy.
Hack saw, No. 2 Economy, motor.
Hammers, 40 & 80 lb., Bradley helve.
Hammers, 75 lb. Bradley upright.
Hammer, 2-B. Nazel, belt and motor
Hammers, str. s. f. 600, 1100, 1800 lbs.
Hammer, 1000 lb Chbg., steam drop.
Hammer, 250 Chbg. board drop.
Hoist, 4 ton V & T high speed.
Hoist, chain 1-ton, high speed.
Hoist, 1 ton C & M spur gear.
Hoists, air, 700, 800 & 1300 lbs.
Keyseaters, No. 60 & No. 2 Baker.
Keyway cutter, 24" Morton, cap. 2½".
Lathe, 9"x3" Shepard, speed.
Lathe, 14"x5" Monarch, t. a.
Lathe, 18"x8" Cisco, c. g., d. b. g.
Lathe, 16"x10" Monarch, grd. hd., t. a.
Lathe, 18"x10" L. & S., d. c. motor.
Lathe, 24x10 Pgh—#250.
Lathe, 26"x10" Walcott, c. g. g.
Lathe, 26"x10" Bridgeford c. g. g. pan.
Lathe, 21"x14" LeBlond, g. h.
Lathe, 36"x64" Bridgeford gun bor.
Lathe, 20"x10" Sidney, c. g. g., t. a.
Lathe, pattern maker's, 24"x11"
Miller, vertical, No. 3 Becker, cone,
Motor, 7½ h. p., 3/60/220/1800.

Motor, 10 h. p. a. c., 3/60/220/1740.
Motor, 25 h. p. slip r. g., 3/60/220/1160.
Motor, 20 h. p., 3/60/220/1200.
Nibbling mche., Cambell 6" m. d.
Paper slitter, 15" Jacques, bench.
Pipe machine, 12" Williams, s. p. d.
Pipe machine, 4" Williams, m. d.
Planers, 48x48x20", 3-heads, Gray.
Planers, 33x33x10", 2-hds., W. & P.
Planer, 22"x22"x5" Cincinnati, 1 hd.
Press, No. 3A Bliss, adj. table.
Press, No. 94 Bliss, punch type.
Press, No. 1 Bliss, punch type.
Press, No. 3 Bliss, punch type.
Press, No. 20 Bliss, o. b. i. type.
Press, No. 1 Toledo o. b. i., pl. m. d.*
Press, No. 14 Stiles (Bliss) plain.
Press, punch type, United, 15,000 lb.
Press, D. G. 62, Ferracute, s. s.
Press, No. 3 Massillon, trimming.
Presses, No. 87 Niagara, screw.
Pump, Centrifugal, 4" disch., m. d.
Punch, No. 0 H. & J., 7" thrt., cap.
1"x½".
Punch, 30" thrt., 1"x1" m. d., s. e.
Punch, Cleveland E.F., 15" tht. m. d.
Punch, Cleveland E.F., 24" tht. m. d.
Punch, Cleveland E.F., 48" tht. m. d.
Punch, Cleveland W., 36" tht. m. d.
Punch, Cleveland X., 60" tht. m. d.
Punch, Rapid, 20" tht., 1"x1", m. d.
Punch, coping, steel plate, 13" thrt.
36" die space, 2 holes 1"x1", m. d.
Punch & shear, 72" W. W. 2"x1½",
motor drive.
Punch & shear, No. 23 Marvel hand.
Punch & shear, Whiting, 16" throat
for m. d.
Punch & shear, 17-B. New Doty,
10" throat, m. d.
Riveter, 1-AA. High Speed, m. d.
Riveter, Allen jaw, 36" cap. 1½".
Riveter, ½" Shuster rotary, belt.
Saw, Newton, 62" blade, comb.
Saw, Burke, 12" blade, capacity.
Shapers, 24" Smith & Mills, Kelly &
Stephoe.
Shear, 42"x½" Niagara, 18" gap.
Shear, 36" Niagara, 18" gap, foot.
Shear, angle, Cleveland 6"x1" table
motor drive.
Shear, ½" Lennox rotary throatless.
Shear, rotary, 12" thrt., cap. 10 ga.
Shear, rotary, No. 2 Niagara, hand.
Shear, rotary bevel, ½", m. d.
Shear, squaring, 8"x14 ga. power.
Shear, squaring, 60"x14 ga. Canton.
Turbo compres., Spencer 5400 c.f.m.
Turbo-generator, 500 kw, 3/60/2300.
Turret lathe, 13" Gisholt, 2½" h. s.

HOW—can our advertisers know that your inquiry comes from Hitchcock's Machine Tool Blue Book unless you tell them? When writing them, won't you kindly say that you saw it in Hitchcock's? Thank you.

USED AND REBUILT MACHINERY

FOR SALE BY

Syracuse Supply Company, 314 W. Fayette St., Syracuse, N. Y.

Guaranteed NEW MACHINES in original crates at prices below list:
Pipe machine, No. 70 Forbes.

Exceptional values in USED TOOLS:

Bolt threader, Acme 2 spindle, with one head, 1" capacity.
Drill, Barr 4-spindle, 8" overhang.
Grinder, Blount 1 1/2 x 14 wet tool, m. d.
Knife grinder, 30".
Lathe, 8x60 Fitchburg lo-swing.
Lathe, 26" x 10' Cooper Bros., \$125.
Millers, Wisconsin hand, (3).
Pipe threader, Jarecki belt drive.
Radial, 5' Pond.

Radial, 5' Dreeses, single pulley drive, gear box, \$475.00.
Rip saw, No. 2 1/2 Powers, self feed, power.
Screw machine, No. 2 1/2 Garvin.
Thread miller, No. 12 Lees Bradner.
Tilted turret, No. 6 Wood.
Turret lathes, No. 4 Foster, (2).
Turret lathe, 2 1/2 x 26 Pratt & Whitney.

FOR SALE BY

Norton-Broadway Mch. Co., Sixth & Baymiller Sts., Cincinnati, O.

LATHES.

30"x16' Niles-Bement-Pond.
24"x16' New Haven, loose change.
30"x14' Prentice q. c.
27"x14' Pond, q. c.
13-26"x14' Putnams, semi-quick.
24"x14' Lodge & Shipley, q. c.

21"x12' LeBlond, q. c.
19"x10' LeBlond q. c.
20"x10' Bradford, loose change.
16"x 8' Bradford, taper.
16"x 8' Lodge & Shipley, q. c.

MILLING MACHINES.

No. 3 LeBlond plain.
No. 3 Cincinnati, single pulley.
26" Oesterlein universal.
No. 4B Brown & Sharpe heavy duty.
No. 4 Cincinnati universal.

No. 4 Cincinnati vertical sgl. pul.
No. 3 Brown & Sharpe, vertical.
No. 2 Cincinnati, vertical.
No. 12 Pratt & Whitney, Lincoln type
Owen two-spindle.

BORING MILLS.

24" New Era.
36" Niles, 2 heads.
34" Builard, 1 head.
42" Gisholt, 2 heads.

42" Niles-Bement-Pond, 2 heads.
50" Niles, 2 heads.
72" Wais & King, 2 heads., \$1,500
6" Gray horizontal.

PLANERS.

24"x24"x6' Ohio.
24"x24"x 8' Pond, 2 heads.
24"x24"x 8' Putnam, 1 head.
30"x30"x 16' Gray, 2 heads.
48"x16' Detrick & Harvey open side.

48"x10' Belmer, 4 heads.
48"x16' Cincinnati, 4 heads.
24"x 8' Smith & Silk, 1 head.
Whitcomb crank planer.

DRILLS AND RADIALS

3-spindle Henry & Wright, 7".
4-spindle Reed sensitive.
3-spindle Reed sensitive.
6-spindle Reed sensitive.
24" Barnes, camel back.
3' Morris, single pulley, gear box.

3' Fosdick, cone drive.
3' Fosdick, motor drive.
4 1/2' Morris radial, arr. m.d. with mtr.
5' American, semi-univ., sgl. pulley.
5' universal, old style.
6' American plain radial, sgl. pul. dr.

MISCELLANEOUS.

Automatics, Model B Cleveland (2).
Bending brakes.
Bolt cutter, 2 sp. Acme 1 1/2".
Compressor, 13/8x10" Worthington, belt drive.
Drill 28" Aurora, tapping att.
Gear hobber, Cincinnati.
Grinders, Nos. 4 & 120 Gardner disc.
Hack saw, 10" Massachusetts.
Hammer, Bradley helve.
Hammers, Bradley strap.
Presses, Toledo, Long & Allstater
& Losbough & Jordan inclinable.
Press, No. 6 Consolidated, inc

Press, No. 62 Bliss power.
Press, 150 ton Caldwell wheel.
Punch and shear No. 3 H. & J. d. e.
Saw, 9"x9" Peerless.
Shaper, 25" Smith & Mills, m. d.
Shaper, 25" Queen City, s. p. d.
Shears, 6' 8", 10" power.
Shear, No. 252 Niagara pwr., 6' cap.
Slotter, 20" Dill.
Threading mche., Auto. Mch. Co.
Turret lathes, 24" Gisholt, with motors (2).
Turret lathe, No. 4 Warner & S.

More than 300 machines tools in stock.

USED AND REBUILT MACHINERY

FOR SALE BY

Chas. Mollitor Machinery Co., 118-124 S. Clinton St., Chicago, Ill.

MILLING MACHINES.

- | | |
|-----------------------------------|------------------------------------|
| No. 2 Kempsmith Maximiller univ. | 16"x8" Chard quick change, taper. |
| No. 3B Milwaukee plain, dbl. arm. | No. 2 Oesterlein plain. |
| No. 3 Hendey plain. | No. 4 Fox miller, single pulley. |
| No. 3 Rockford h. p. plain, s. p. | 48" Niles double head boring mill. |
| No. 3 Brown & Sharpe plain, s. p. | 24" Binnse horizontal boring mill. |
| No. 2 Rockford plain. | Large variety hand millers. |
| No. 2 Brown & Sharpe plain. | 18"x8" Sidney quick change gear. |

LATHES.

- | | |
|--------------------------------------|---------------------------------------|
| 26"x13" Wickes, semi-quick chg. gr. | 18"x8" Prentice, geared head. |
| 24"x12" Bradford q. c. g. | 14"x6" Rockford, q. c., draw, collet. |
| 18"x10" Sidney, q. c. g. | 14"x 6" Bradford q. c. g. |
| 18"x 8" Greaves-Klusman q. c. g. | 14"x6" Hamilton q. c. g. |
| 16"x 8" Cincinnati, q. c. g., taper. | 14"x8"-12"x6" Hendey's, taper draw. |
| 16"x8" Rockford, taper att. | |

GRINDERS.

- | | |
|-----------------------------------|------------------------------------|
| No. 2 Norton universal (2). | Nos. 14 and 16 Brown & Sharpe cyl. |
| No. 13 Brown & Sharpe universal | 4"x12" Norton self-contained. |
| Nos. 1 and 3 Brown & Sharpe univ. | 10"x16" Sterling universal. |
| 7"x18" Walker universal. | No. 6 Heald internal. |
| No. 3 Wilmarth & Morman surface. | Bryant internal chucking. |
| 6"x18" Reid surface. | Abrasive surface, magnetic chuck. |

GEAR CUTTERS.

- | | |
|-------------------------------------|------------------------------------|
| 8"x22" Fellows gear threader, m. d. | 5" Cataract auto. gear and pinion. |
| No. 3 Barber-Colman auto. gr. gen. | 4" Standard automatic. |
| Brown & Sharpe No. 13 gear cutter. | 4" Waltham auto. gear cutters (4). |

RADIALS AND DRILLS.

- | | |
|----------------------------------|-----------------------------------|
| 6' American triple purpose. | 2-spindle Sipp. |
| 6' American triple geared. | 4-spindle Aveys, Leland-Gifford. |
| 4' American triple geared. | Henry & Wright high speed, b. b. |
| 4' Fosdick. | 6-spindle 20" Barnes, power feed. |
| 6' Prentiss Bros. | 28" Snyder sliding head. |
| 5' Reed Prentice. | 24" Aurora sliding head. |
| 3' Bickford, all gear, box feed. | 20" and 24" Barnes camel back. |

PRESSES AND SHEARS.

- | | |
|--------------------------------|-----------------------------|
| 8' Toledo square shear, 3/16". | No. 5A Toledo inclinable. |
| 5' steel sq. shear, 12 gauge. | Smaller shears and brakes. |
| 52"x16" gap square shear. | No. 15 Toledo 20" throat. |
| 1500 lb. W. & W. drop hammers. | No. 4A American inclinable. |

Large variety and sizes of rotary shears, beaders, etc.

SHAPERS AND PLANERS.

- | | |
|------------------------------------|-----------------------------------|
| 24" Milwaukee geared, crank. | 16" Rockford geared, crank. |
| 24" Cincinnati geared crank. | 15" Hendey, tight & loose pulley. |
| 16" Steptoe crank. | 16" American crank. |
| 16" American geared, crank. | 20" Rockford back gear. |
| 16" Flatlath crank, single pulley. | 26"x6" Detrick & Harvey openside. |

SCREW MACHINES AND TURRET LATHES.

- | | |
|---|-------------------------------------|
| No. 6 Warner & Swasey heavy duty, carriage, power cross feed. | Nos. 0 & 2 H. & S. semi-auto. |
| No. 6 Warner & Swasey tur. lathe. | Nos. 2 & 00 B. & S. tur. formers. |
| No. 4 W. & S. for lathe, grd. frict. | 4" x 1" Cleveland. |
| No. 4 Warner & Swasey b.g., fr. hd. | 4-sp. Gridleys, auto. (2) model F. |
| No. 2 Warner & Swasey screw mch. | 24" Jones & Lamson (2). |
| No. 1 Warner & Swasey screw mch. | 14" Acme b. g., friction head. |
| No. 2 Warner & S. open hex. tur. | 14" & 24" Fosters, univ. and plain. |
| 1" cap. Pratt & Whitney. | No. 1-B Foster univ., grd. hd. (3). |

MISCELLANEOUS.

- | | |
|---|--------------------------------------|
| Bolt cutters, 1", 1 1/2" Landis. | Tappers, 1" Garvin, Pratt & Whitney. |
| Bolt cutters, 3"-14" (3). | Tapper, 1" Gould & Eberhardt. |
| Keyseaters, Nos. 0 & 2 Becker. | Tapper, No. 2X Garvin auto. |
| Keyseaters, No. 2 Davis. | 1" Landis 1" Geometric gear cutter. |
| Large stock of lathes, punch presses, plain and universal grinders, 2", 4" 8", 8", 10" power squaring shears, tappers, several hundred Warner & Swasey, Potter & Johnston, etc., box, boring tools etc. | |

USED AND REBUILT MACHINERY

FOR SALE BY

E. L. Klauber Machinery Co., 320 South Third St., St. Louis, Mo.

Band saws, 14" motor drive.
Bench drills, motor drive, 110 volt.
Drill presses, 10" to 34".
Drop press, 200 lbs. power lift.
Gear hobber No. 000, S. & S.
Gear miller, automatic, 4" cap.
Grinders, Greenfield cutter & tool.
Grinder, No. 2 Garvin hole.
Grinders, disc, motor drive, bench.
Lathe, Stark No. 3 precision with compound and 25 collets, \$125.
Lathe, 26x10 raised to 42" Wickes 3 step cone, double back gear \$450.
Milling machine, Knight No. 1 1/2.
Milling machine, No. 4 Cincinnati plain, all geared, single pulley dr.

Punch press, No. 2 Toledo o. b. i.
Punch and shear, No. 18 Williams & White.
Screw mches, 3" Cleveland auto. (2).
Screw machine, Gridley 1 1/2", 4-sp.
Screw machine, No. 0 Brown & Sharpe automatic.
Screw machine, Wood tilted turret 1" bar feed with collets \$250.
Screw machine, No. 56 National Acme 4-spindle automatic.
Tapping machine, No. 6 St. Louis.
Tapping mach, 3/4" Montgomery h. s.
Tapping machine, Rickert-Shafer.
Tapping mche., No. 1 Garvin auto.
Welder, spot; National 25 k. w.

FOR SALE BY

McDonald Machinery Co., 1531-33 N. Broadway, St. Louis, Mo.

Arbor presses, Eames No. 6.
Boring mill, Barrett 5" horiz.
Boring mills, 6 Bullard 42" low price.
Demagnetizer, Walker.
Drill, Moline 4-spd.; Moline 32-sp.
Drills, Baker, heavy duty (2).
Drills, Leland-G 1-sp. h.s., b.b. floor.
Drills, Kokomo 1-spindle, Sipp 1 spdl., h. s., b. b., H. & W. 2-spd.
Drills, 20", 24", 26" & 28" b. g. & tap.
Drills, Prentice 3"; Bickford 4" radials
Niles 5" s. p. universal radial.
Gear generators, Gleason 15"; Bilgrims 15".
Gear hobber, Gould & E. 24".
Grinders, Landis piston, motor drv.
Grinder, Heald No. 60 cylinder.
Grinders, modern internal; Blount 30", wet (3), Heald 8", mag. ck.
Grinders, St. Louis No. 9; Modern 12"x60"; Landis 12"x36".
Grinder, Reed-Prentice vert. surf., 2 chucks, table 12"x80".
Grinder, Landis 16"x66" crankshaft.
Hack saws, 4x4, 6x6 & 2 Racine Jrs.
Atkins 4x4" Peerless 6x6"; Atkins 8x8" h. s.
Hammers, Bradley 40 lb. helve; Keyseater, Mitts & Merrill No. 2.
Lathes, Davis 22"x10" q. c. g.; Monarch 11"x4" and 12"x6", q. c. g.
American 20"x10"; quick change grd. Whitcomb - Blaisdell 22"x8" q. c. g. Monarch 16"x8"; C. & J. 15"x8" all quick change geared; 40 assorted sizes, quick and loose change gear.
Milling machines, Ohio No. 20 plain.
Hendey No. 2 universal;
LeBlond No. 3-H plain; Brown & S. No. 3 plain; B. & S. No. 3-B pl., s. p. d.; American No. 1 1/2 plain;

Cincinnati No. 3 plain; Becker No. 25 plain, Kemp No. 3 univ.
Milling and drilling mchs., Knight No. 1 1/2 with power feed.
Pipe machine, Curtis 3", motor dr.; Merrill 4" belt drive, Jarecki 2"; E. C. & B. 16".
Planers, Gray 28"x28"x8', 1 head; Cincinnati 36"x36"x16' 2 heads; Pond, 36"x36"x12' table, 18' bed, 2 heads; Whitcomb 30"x30"x8'.
Punches, W. & W. No. 17 punch.
Punch presses, 4 Consolidated No. 2; Holden No. 88; Bliss No. 62 grd.; Ferracute No. 1 o. b. i., (2) Federal Nos. 1, 2, 3; Niagara No. 4 1/2 o. b. i.; Bliss No. 19-C, o. b. i.
Pyrometer, Thwing elec., with rec.
Rolls, Radger 50" Pyramid power rolls, 5" dia. 4" cap.
Saw, Peerless universal shaping.
Screw machine, Cleveland 2 1/2" auto.; P. & W. No. 2 1/2 hand; Foster No. 3 hand; Woods No. 2 tilted turret head; Bardons & O. No. 7; National A. No. 52 auto., 4-spindle, m. d.; Milholland b. g. hand; Foster No. 7 hd. b. g.
Shapers, S. M. 16"; 24" Queen City 24" back geared, American 20" b. g.; G. & E. 16", b. g.; Niles traveling hd.; Milwaukee 16" b. g.; Walcott 20" b. g.; S. & M. 21" and 26" b. g.; Cincinnati 24" b. g.
Shears, 60" thrt. rotary slitting. (2).
Square shears, Niagara 62" power, m. d. 18-ga.
Threading machines, Webster & Perks 4-spindle; Geometric.
Turret lathes, Bullard 24" vertical.
Welders, butt, Federal, 1/4" rds.
Welder, spot, Vollans; Kay See.

USED AND REBUILT MACHINERY

FOR SALE BY

R. S. Armstrong & Bro. Co., 676 Marietta St., N. W., Atlanta, Ga.

LATHES

16"x8' Cincinnati q. c. g., d. b. g. 24"x14' South Bend l. c. taper at.
18"x11' Chard semi-q. c., d. b. g. 26"x18' Walcott q. c. g., d. b. g.
24"x20' American q. c. g., d. b. g.

GRINDERS

No. 1 Cincinnati cutter and tool. No. 3A Landis universal.

SHAPERS

12" Springfield plain crank. 20" Steptoe back geared.
20" Steptoe plain crank. 24" Smith & Mills back geared.

DRILLS

14" U. S. sensitive. 32" Hoefler sliding head.
24" Cincinnati sliding head. 42" Bickford sld. hd., tapping att.
No. 25 Foote-Burt h. d. 24" Fossick radial, cone, tap. att.

MISCELLANEOUS

Bolt cutter, 14" Acme dbl. hd. Hobber, 18-H Gould & Eberhardt
Gear cutter, No. 3 26" B. & S. Keyseater, No. 1 Catlin.
Gear cutter, 33"x9" Gould & E. Keyseater, No. 2 Mitts & Merrill.
Hack saw, 6"x6" Peerless. Pipe machine, 4" Oster.

FOR SALE BY

Strafer Machinery Company,

14th and Provost St.,

Jersey City, N. J.

BORING MILLS VERTICAL

14' Niles heavy, swing 15' 4". 54" Gisholt rapid traverse.
76" Pond heavy 5 step cone, b. d. 53" N.-B.-P. rapid traverse, s. p. d.
72" Gisholt, s. p. d., rap. traverse. 51" N. B. P. speed box 16 speeds.
60" Niles-Bement-Pond, motor dr.
Portable boring bars, Underwood, 4"x8' with 12" heads, grd. feed \$200 each.

DRILLS

6' American universal, speed box. 22" Barnes upright.
5' Prentice speed box drive. 32" Aurora upright.
34' Dreses, speed box, s. p. d. 20" Prentice upright.

GEAR CUTTERS

No. 5A Lees-Bradner hobber. No. 13 Brown & Sharpe spur & bev.

LATHES

18"x8' Fairbanks 3-step c., d. b. g. 18"x8' Fay Scott 3 s. c., d. b. g.
42"x14' Bridgeford g. h., q. c. 26"-48"x22' McCabe double spindle.
36"x14' Bridgeford g. h., q. c. 90"x27' Putnam t. g., b. d.
22"x10' Drapier cone. 48"x30' Bridgeford g. h.

MILLING MACHINES

P. & W. planer type, adj. rail with No. 3 Pedrick & Ayers plain.
2 heads, 24"x24"x9". No. 1 Brown & Sharpe belt feed.
No. 3 Cinti. vertical, s. p. d.

PIPE MACHINES

6" Saunders, new dies, belt drive. 8" E. C. & B. with dies, b. d.

PLANERS

36"x36"x12' N. B. P. 2 hds., m. d. 42"x8' D. & H. openside 3 heads.
42"x8' D. & H. openside 1 head. 48"x48"x14' Gray, 4 heads.

PUNCHES AND SHEARS

No. 3 H. & J. 36" t., double. No. 4 H. & J. double 48" t.
Cleveland 24" t., cap. 1"x1". 10'-3/16" Loy & Nawrath squaring.

MISCELLANEOUS

Beading machine, Bliss. Hammer, 2000 lb. board drop.
Bending roll, capacity 8"x3". Miller, Burr spline.
Borer, wood, American. Roll, 30" tinsmith.
Centering machine, P. & W. 3". Rotator, 10 ton.
Compressor, Ingersoll-Rand 8"x6". Ship augers, 500.
Die slotter, Fox. Slotter, 24" Niles.
Generator, 100 k. v. a. Diesel engine. Straightener, wire core, to 5/16".
Hammer, 400 lb. Chamber. steam. Wheel press, 250 ton.
Lathes, Oliver pattern makers slide Wheel press, 350 ton.
gap.

USED AND REBUILT MACHINERY

FOR SALE BY

General Machinery Corporation,

Drill, Sibley 24" sl. hd., b. g., p. f.
Drill, Myers 14" with rd. & sq. tables.
Gas forge, American No. 2.
Lathe, Cataract precision bench,
7"x32", 4" column capacity.
Miller, Burke No. 2 bench.

170 Summer St., Boston, Mass.

Motor, G. E., 50 h. p., 1200 r. p. m.,
556-3-60.
Oven furnace, American No. 16.
Press, Cons. No. 3, flywh., 2" stroke.
Shear, Bliss No. 105 rotary.
Turret lathe, Warner & Swasey 14".

FOR SALE BY

Mid-West Machine Tool & Supply Co.,

Davenport, Iowa

Grinders, No. 10 Brown & Sharpe.
Grinder, 10"x52" Landis, s. p. d.
Grinders, surface, No. 22, Heald.
Hobbers, Nos. 3, 12-B & C.
Lathe, No. 9 LeBlond multi-cut.

Miller, No. 13-B B. & S., production.
Miller, No. 1 Brown & Sharpe.
Miller, 30"x10" Ingersoll, 4 heads.
Planer, 60"x60"x16' Pond.
Radials, 3' Morris, Cincinnati Bick.

Partial list; send us your inquiries.

FOR SALE BY

Nelson Machinery Co.,

123 N. Pearl St., Green Bay, Wis.

Boring mill, 7' Bickford, vert. with 2 swivel heads, cone drive.
Boring mill, 42" Gisholt vertical, one turret and one swivel head, arranged
for motor drive.
Drills, Detroit 5-spindle, semi-auto, (2) each, \$400.
Drill press, 5' Drees full universal radial, with m. d. arranged.
Pipe machine, No. 14 Jarecki 2 1/2 to 8", q. c., adjustable dies.
Riveter, No. 81 Grant rotary, 1/2 h. p., 3 ph. 60 cy., 220 volt vertical motor.

FOR SALE BY

Clinton Machinery Co.,

126-128 S. Clinton Street, Chicago, Ill.

MILLING MACHINES.

No. 3 Cincinnati plain.
No. 2BS Kearney & T. s. p. d. pl.
No. 2 Rockford s. p. d. universal.

No. 2 Cleveland universal s. p. d.
No. 1 1/2 American plain.
No. 1 1/2 Valley City universal.

LATHES.

26"x12' Advance q. c. g.
24"x12' Bradford q. c. g.
22"x10' American l. c. g.
24"x8' American grd. head q. c. g.
18"x8' Morris q. c. g. taper & collets.
4" Hardinge, Ames bench lathes.

16"x6' American q. c. g. taper att.
15"x8' South Bend with chucks.
14"x12' Monarch g. h., motor drive.
14"x8' Carroll & Jamieson q. c. g.
14"x5' Seneca Falls with chucks.
13"x6' South Bend with chucks.

PUNCH PRESSES.

No. 76 Toledo b. g., fixed legs 4 1/2" str.
No. 4 Consolidated o. b. i. 4" str.
No. 93 Bliss Stiles type.

No. 61 Bliss s. s. reducing 4" str.
No. 58 Bliss s. s. reducing 2 1/2" str.
No. 4 Cleveland o. b. i.

GRINDERS AND SHAPERS.

6x32" Norton cylindrical.
No. 14-30" Bealy disc with press.
Dauber-Kratsch tool and cutter.

21" American b. g. crank.
24" Gould & Eberhardt b. g. crank.
15" Potter & J. power feed to head.

DRILL PRESSES.

42" Barnes s. h., b. g., p. f. (3).
28" Superior s. h., b. g. 90 1/2 new.
26" Barnes s. h., b. g.

No. 1 Knight milling and drilling.
3 sp. Kern hi speed b. b. No. 2 taper.
Single spindle Avey h. a. b. b.

MISCELLANEOUS.

Bolt cutter, 2" standard with dies.
Hammers, 30 lb. Bradley complete
motor drive.
Hammers, 1 1/2 B, 3A, 4A high speed.

Hack saws, 6x6 Racine or Peerless.
Hack saw, 9x9 Peerless.
Screw machine, No. 2 W. & S. with
power feed.

USED AND REBUILT MACHINERY

FOR SALE BY

W. P. Little Co.,

W. 9th & Front St., Cleveland, O.

LATHES

18"x8' Whitcomb B. q. c. g. d. b. g.
24"x10' LeBlond d. b. g., q. c. g.

18"x8' Lodge & Shipley pat. head.
16"x8' Prentice, taper attachment.

GRINDERS

No. 60 Heald, 36" table.
No. 75 Heald internal.

No. 6 Bryant internal.
No. 10 A Bryant internal.

PRESSES

Style G Cleveland on turntable.
36" Ohl press brake.

Metalwood hydro-pneumatic.
East Iron Wks. open back.

SQUARING SHEARS.

60" Streine 16 gauge.

48" shear, 12 gauge.

MISCELLANEOUS

Drill, Barnes 4-spindle.
Drill, Barnes 3-spindle.
Gear cutter, 30" Whiton.
Hack saws, Marvel Nos. 4 & 5.
Hack saws, Atkins Kwikkut.
Miller, 28" Cincinnati face.
Pinion cutter, Standard automatic.

Pinion cutter, Bilton automatic.
Planer, 32"x32"x14' Pond.
Power hammers, Beaudry 75 lbs.
Riveter, Shuster 1" and 1 1/2".
Splitting shear, S 24 Yoder.
Splitting shear, D 22 Rock River.
Tumbling barrel, Hoevel sand blast.

Partial list. 150 other tools on hand. Send us your inquiries.

FOR SALE BY

Brownell Machinery Co.,

150 Pine St., Providence, R. I.

BORING MILLS.

36" Bullard New Era vertical.

42" Bullard vertical.

DRILLS.

5' Prentice radial.
3' Prentice radial.
4-spindle b. f. Barnes 23" box col.
4-spindle Dwight-slate sensitive.

7-spindle Dwight-slate sensitive.
No. 2 Langelier h. s., b. b. bench.
No. 2 Langelier plain, bench.

GEAR CUTTERS,

No. 13 Brown & Sharpe.

No. 2 Bilton.

GRINDERS

No. 4 B. & S. planer type surface
No. 3 B. & S. cutter and reamer
grinder.

20" Blount wet tool.
No. 103 Rivett.
No. 2 B. & S. universal.

LATHES.

30"x20' Fitchburg.
21"x16' Porter, q. c. g.
16"x 6' Cisco, q. c. g.

14"x 6' Reed, taper, oil pan.
No. 5 1/2 Sloan & Chace bench precis.
14"x 5' Reed extra heavy stud.

MILLING MACHINES

No. 13-B Brown & Sharpe mfg.
No. 0 B. & S. plain millers (4).
No. 1/2 Van Norman duplex, vise,
arbor, centers.

No. 13 1/2 Garvin plain.
No. 25 Bilton plain.
No. 4 Thurston die.

SCREW MACHINES & TURRET LATHES.

16" Warner & S. g. f. h. turret lathe.
20"x8' Reed extra hvy. turret lathe.

22"x8' Bullard with turret.
No. 0 B. & S. wire feed, hand.

SHAPERS AND PLANERS.

No. 1 Rhodes shaper.
24" Hendey friction.

26xx26"x6' Whitcomb, 2 heads.
17"x17"x4' Whitcomb.

PRESSES.

No. 3-A Standard, roll feed.
No. 0 Manville.

No. 1 Bliss d. a. cam.
No. 7 Ruesch foot.

MISCELLANEOUS.

Band saw, Houghton & Richards
metal cutting 12".
Hammer, 80 lbs. Bradley cushioned
helve.
Index centers, planer, 20".

Index centers, milling machine, 10".
Rolling mill, 5x8 McWilliams.
Rolling mill, 6x10 McWilliams.
Rolling mill, 12x20.
Shaft straightener, Rockford.

USED AND REBUILT MACHINERY

FOR SALE BY

C. C. Howarth Co., - 1457 Franklin St., Detroit, Mich.

Automatics, No. 24 New Britain, tapping spindle, (2).
Cold saw, 32" Newton, motor drive.
Drill, No. 3 Bausch multiple, with 24 spindles.
Drill, No. 13 Pratt & Whitney multiple spindle.
Gear generators, No. 5A Lees-Bradner, (2).
Millers, No. 3B Brown & Sharpe heavy duty, plain, single pulley drive, (2).
Send us your inquiries, as we have more than 200 tools in stock.

FOR SALE BY

John A. Stockman, - 240 West 25th St., New York, N. Y.

Automatic, 1½ Gridley multiple spindle, Model "G", m. s., lot of equipment.
Cold saw, Lee-Simplex, size 15, type SD.
Cutting-off machine, 2" Huriburt-Rogers, (2).
Hoist, ½ ton Sprague electric, d. c.
Lathe, Blount bench.
Lathes, 17"x6" LeBlond q. c. g., manufacturing, pan beds, (4).
Lathe, 3x36 Jones & Lamson turret.

FOR SALE BY

Fitchburg Grinding Machine Corporation, - Fitchburg, Mass.

LATHES.

Putnam 14"x6",
16"x8" LeBlond.

New Haven 32"x12".

PLANERS.

22"x22"x6" Whitcomb.

30"x12" Niles-Bement-Pond.

TUKRET LATHES AND SCREW MACHINES.

3x36" J. & L., chuck equipment,
double spindle.

2x26" Greenlee, bar & chk. equip.
21" Gisholt.

BORING MILLS.

3"x24" Rockford horizontal.

FOR SALE BY

The O'Brien Machinery Co., 113 N. Third St., Philadelphia, Pa.

Crane, 96" span box a. c. traveling
crane, 3 motors.

Drill, 4" Harrington radial, belt.

Drill, 32" Aurora, motor driven.

Drill, 20-spindle Natco, No. 2 taper.

Gear cutter, 36" Becker-B. auto.

Gear cutter, No. 24 Whiton, belt dr.

Grinder, 12"x36" Cincinnati univ.

Grinder, No. 2 Norton universal.

Hammer, 2000 lbs. Chambersburg,

double frame, steam forging.

Hammer, 1100 lb. N. B. P., sgl. fr.

Hammer, 100 lb. Little Giant, belt.

Lathe, 26"-48"x14" McCabe-2-in-1,

belt.

Lathe, 30"x30" Harrington.

Lathe, 26"x30" Pond, with motor.

Miller, Newton duplex, planer type,

table 21"x12".

Miller, No. 4 Brown & Sharpe plain.

Miller, No. 4 LeBlond h. d., plain.

Milling mche., No. 3 Garvin duplex.

Pipe machine, 2" Landis, belt.

Pipe machines, Oster portable, gas.

drive, all sizes.

Planer, 36"x36"x24", Bement, 4 hds.

Pipe machines, 2", 4", 6", 8" & 12"

Oster, Cox, Williams, Eaton-Cole

& Burnham and Jarecki makes,

belt or motor driven, comp. stock.

Planer, 36"x36"x12" Cincinnati, 2 hds.

Press, No. 73½ Bliss trimming press.

Press, No. 37 Niagara, 1100 lb. fly-

wheel, solid back.

Press, No. 123 Ferracute, geared,

double acting, flywheel 475 lb.

Punch, No. 1½ H. & J. 20" thrt. 4x4

Punch, No. 1 Royersford double end,

4"x4".

Rolls, 14" bending, belt, drop end,

rolls 9½" and 8½".

Rolls, 6" Beloit, drop end, rolls 4" &

4½", belt drive.

Saw, 30" Espen-Lucas, cap. 8".

Shaper, 16" Ohio, single grd. crk.

Shaper, 16" Whipp, b. g., cone dr.

Shaper, 18" Cincinnati, one travel-

ing head, 2 tables.

Shear, Niles, plate splitting, 1" cap-

acity, motor-driven.

Slotter, 10"-12" Dill, belt drive.

USED AND REBUILT MACHINERY

FOR SALE BY

American Spiral Spring & Mfg. Company

56th St. and A. V. R. R., Pittsburgh, Pa.

CENTRIFUGAL COMPRESSOR.

One No. 140 General Electric centrifugal compressor, complete with 10 h. p. motor, 220 volt, a. c., 3 phase, 60 cycle, shown in General Electric Bulletin 48609 and Instruction Book 88602-A.

FOR SALE BY

United Mchry. & Supply Co.,

Bolt threader, 1" Landis.
Bulldozer, Williams & White U-29.
Grinder, 24" Y. & F. knife.
Hammer, helve, small upright.
Lathe, 24x10 Lodge & Shipley, q. c.

1241 Walton St., St. Louis, Mo.

Matcher, No. 94 Berlin.
Planer, 24x24x8, one head.
Punch press, gang, Nos. 3, 4 L & A.
Punch and shear, 4" in 4" d. c.
Rolls, 8' and 6' drop end pyramid.

FOR SALE BY

Taylor-Hall Welding Corporation, 99 Hope Ave., Worcester, Mass.

WELDERS

Taylor-Winfield 2 k. w.
Taylor-Winfield 7½ k. w. 10" horns.
Federal 10 k. w. 12" adj. horns.
Toledo 20 k. w. 30" horns.
National 30 k. w. 25" horns.
National 35 k. w. 25" horns.

Winfield B50SA, cap. ½"
Thomson 2A auto., cap. ½"
Thomson 7A auto., cap. ½"
Winfield B-103, cap. ½"
Toledo No. 3, cap. ½"
Toledo 8B, cap. ½"

New machine guarantee with every welder.

FOR SALE BY

Randle Machinery Co.,

Air compressor, 7x6, 9x8, 10x10 I-R.
type E-R-I.
Air comp., 11x12 Worthington f. v.
Bending rolls, 7"x½" cap. H. & J.
Bending rolls, 8"x½" Niles.
Bending rolls, Nos. 6 and 9 Bertsch.
Bolt cutter, 1½" Acme and Landis.
Bolt cutter, 4" Acme, m. d. or b. d.
Boring mill, 37" Bullard.
Boring mill, 42" & 60" Bullard.
Boring mill, 72" Wais & King.
Boring mill, 50" & 66" Niles.
Brake, 4"x10 ga. Robinson.
Brake, 10"x16 ga. D. & K.
Drill, 24" Cincinnati Bickford.
Drill, 3" Cincinnati-Bickford g. b.
Drill, 3' & 3½' Fosdick g. b.
Drill, 5" Cincinnati-Bickford.
Drill, 6" American t. g., m. d.
Gear hobber, Nos. 1 & 3 Farwell.
Gear hobber, No. 18-H G. & E.
Gear hobber, Nos. 1 & 2 S. & S.
Hack saw, 6x6 Racine or Peerless.
Hack saw, 9x9 Peerless m. d.
Hack saw, 13x15 Racine.
Hack saw, 6x6 Peerless universal.
Keyseater, Nos. 1 & 2 Davis.
Keyseater, Nos. 60 & 2 Baker.

1733 Power St., Cincinnati, Ohio

Keyseater, No. 2 M. & M.
Lathe, 16"x6" L. & S. q. c.
Lathe, 16"x6" P. & W. tool room.
Lathe, 19"x10 LeBlond q. c.
Lathe, 21"x12 LeBlond q. c.
Lathe, 18"x12 Davis q. c.
Lathe, 22"x19" American grd. head.
Lathe, 27"x20" L. & S. q. c.
Lathe, 36"x26" Wickes semi-q. c.
Lathe, 37"x28" Putnam s. q. c., m. d.
Miller, No. 24 Oesterlein
Miller, No. 1-B B. & S. plain.
Millers, Nos. 2 and 3 LeBlond.
Planer, 48"x48"x14" Gray, 4 heads.
Planer, 60"x60"x10" Pond, 3 heads.
Planer, 72"x72"x20" Ridgway, 4 hds.
Pipe machine, No. 5½ Merrill.
Pipe machine, 4" and 12" Curtis.
Shaper, 14" and 18" Steptoe.
Shaper, 24" G. & E. b. g.
Shaper, 24" Queen City b. g.
Squaring shear, 42"x16 ga. Niagara.
Squaring shear, 8"x16 ga. Bertsch.
Shear, No. 27U Buffalo m. d.
Shear, No. 2 L. & A. univ. m. d.
Turret lathe, Nos. 2 & 4 W & S.
Wheel press, 150, 200 ton cap.

Also many other tools of various sizes and types. Send us your inquiry.

USED AND REBUILT MACHINERY

FOR SALE BY

Foster Machinery Company, 2613 E. 73rd St., Cleveland, Ohio

1½ Cincinnati universal.

MILLERS.

No. 2 Brown & Sharpe plain.

MISCELLANEOUS.

Brake, 6', 10 ga., box and pan

Drill, 18-spindle No. 4 Bausch.

Drill, Baker.

Pipe machine 2" Jarecki.

Shear, 12'x14 ga. Loy & Nawrath.

Riveters, Nos. 2-A and 3-A High Speed.

Upsetter, 2½" Acme (steel).

Welder, buit, 2" round.

FOR SALE BY

M. A. Wertman Machinery Co., 427 Penton Bldg., Cleveland, Ohio

Arbor press, No. 3½ Greenerd (2).

Arbor press, No. 3 Greenerd.

Brake, 8'x16 gauge Robinson power brake.

Broach, No. 3 J. N. La Pointe double, like new.

Drill, radial, 4' Hammond sensitive, tapping attachment s. p. d. or m. d.

Drill, Demco, ball bearing sensitive 12000 r. p. m. bench type.

Drill, No. 2 Colburn 3 spindle 2" capacity.

Drill, 31" Kokomo sliding head, No. 4 M. T.

Grinder, Landis, 10"x72" self contained motor drive excellent condition.

Hammer, Beaudry 200 lb., used very little, belt drive.

Milling machine, Brown & Sharpe No. 3 plain, power quick traverse table.

Milling machine, Milwaukee, No. 2A mfg. type, single pulley drive.

Polishing lathes, double end ball bearing, (5).

Polishing machine, Blevney vertical, belt polishing machine.

Press, Ferracute No. P3 punching press, excellent condition, weight 3600 lb.

Press, Cleveland No. 34 punching press, excellent condition, weight 5000 lb.

Press, Cleveland No. 52 s. s. trim. with side shear, new condition.

Press, Cleveland No. 6-I, o. b. i. brand new, weight 3300 lb.

T'head miller, Coulter hob thread miller, perfect condition.

Turret lathe, 28" Gisholt complete with tools.

Turret lathe, 24" Gisholt motor driven, 6½" hole thru spindle.

Turrets lathes, Warner & Swasey, No. 6 g. f. h. (2).

Turret lathe, No. 3 Foster g. f. h.

FOR SALE BY

Brown Machinery Co.,

2323 N. 9th St., St. Louis, Mo.

Blowers, Nos. 3, 7 and 9 Sturtevant.

Broach, No. 1 La Pointe.

Drills, Barnes 20" with tappg. attmt.

21" C-O & Champion; 22" Barnes;

25" American; 24" & 32" Mechanics.

Drill, multiple, No. 66-D Moline

"Hole Hog"

Drills, radial, 4' Bickford; 3' Prentice.

Gear hobber, G. & E. No. 1716.

Grinder, edge, No. 302 Safety

Emery Wheel Co.

Grinders, emery, St. Louis & W.;

large stock new at 50¢ disc

Grinders, disc, No. 6 Besly; No. 202

Badger.

Grinders, drill, W. & M; G. R. B3T.

Grinders, plain, 10x26" Norton;

8x26" B. & S.; 12x36" Modern.

Grinder, universal, No. 12 B. & S.

Hammer, helve, 40 lb. Bradley; No.

2 Pettingell.

Lathes, turret, 16" Gisholt, Omar,

Foster, J. & L.

Lathes, No. 5A Potter & Johnston.

Lathes, 16" Monarch; 18" Lodge &

Shipley; 26" Putnam; 30" Blaisdell.

Millers, No. 4 Hendey; No. 0½

LeBlond; No. 2 Hendey Norton,

universal; No. 7H Becker; Pratt

& Whitney 2" spline.

Planer, 42"x42"x10' Pond.

Press, arbor, No. 3 A Geier.

Presses, o. b. i., Niagara 4½.

Presses, hydraulic, 36x72" Elmes.

Press, hydraulic, Lourie 200 ton.

Profilers, Putnam; Reed-Prentice.

Punch & shear, No. 10½ Badger.

Riveters, No. 2 Grant; No. 4-V-3

Grant, mr. dr.

Shaper, 14" Barker; 12" Whipp.

Shears, rotary splitting, No. 134

Marshalltown 4' thrt.; ½" cap.;

No. 13 Pettingell.

Shear, square, 372 Pexto, 10 ga.;

power 72".

Welders, spot, Agnew ½" capacity.

And many others. Write for list 130.

USED AND REBUILT MACHINERY

FOR SALE BY

Strombeck-Becker Mfg. Co., **Moline, Ill.**
HYDRAULIC PRESS
Lourie Type E hydraulic press, 75 ton, 22x22 platens. New.

FOR SALE BY

W. H. Hobbs Supply Co., **Eau Claire, Wis.**
Lathe, 18"x8' Lodge & Shipley, patent head, single pulley drive, quick change, taper attachment, countershaft.
Lathe, 24"x16' Lodge & Shipley engine, 3-step cone, quick change, compound rest and countershaft.
Lathe, 24"x12' Lodge & Shipley engine, 5-step cone, 2 1/2" hole in spindle, quick change, compound rest and countershaft.
Planer, 4'x4'x14' Belmer & Eames metal, spur gear, 2 heads on cross rail, one side head, power feed on rail with countershaft.
Planer, 41"x3'x18' bed widened, patent spur gear, 2 heads on cross rail, 2 side heads, power feed.

FOR SALE BY

J. L. Lucas & Son, Inc., **3 Fox St., Bridgeport, Conn.**
Our Latest Purchases.

MILLING MACHINES.

No. 1 Brown & Sharpe universal, full equipment plus vertical attachment, 3 years old, like new. (2).
2M Cincinnati universal, late machine, full equipment, (2).
No. 2 Cincinnati high power universal, s. p. d., slotted nose.
No. 2 Cincinnati high power plain, s. p. d., slotted nose, power rapid traverse.
No. 3 LeBlond heavy duty universal, cone drive, full equipment plus vertical heads and rack cutting attachment.

TURRET LATHES.

No. 2-A Warner & Swasey, 114,000, chucking equipment.
14"x18" Pratt & Whitney, power feed to turret and cross slide, new.
24"x26" Pratt & Whitney, power feed to turret and cross slide, new.
18" Libby, 4 years old, regular equipment, excellent.
No. 6 Brown & Sharpe hand screw, power feeds.

MISCELLANEOUS.

Boring mill, No. 1 Cleveland horizontal, single pulley drive, 2 1/2" bar.
Drills, Henry & Wright s. s. high speed, class "B" and "K", (2).
Grinder, 14" Pratt & Whitney surface, ball bearing, magnetic chuck.
Lathe, 18"x10' Hendey yoke head
Lathes, 14"x6' Hendey yoke head, taper attachment, (2).
Turret lathe, 24" Bullard vertical, rapid production, New Era type turret.
Immediate shipment with one or two exceptions, from Bridgeport stock. Quotations immediately on request.

New and Used Wood-Working Machinery

For a large list of new and used wood-working machinery, consult **Wood-Working Machinery**—a monthly publication similar to this, but devoted to the advertising of wood-working and saw-mill machinery and allied equipment.

A copy may be had free of cost on application to the publisher, **Hitchcock Publishing Co., 508 S. Dearborn St., Chicago, Ill.**

Complete Machine Shop and Foundry For Sale

Gustafson Manufacturing Co., Chattanooga, Tenn.

Due to the demise of Mr. Gustafson, we purchased their complete plant of machine tools and foundry equipment, good will etc.

We have only ninety days in which to move the material, and if we can make direct sales to users prior to this time, have some attractive bargains to offer. Inspection of the material, if desired, can be made at above plant.

All motor driven machines listed are for 220 volt, 3 phase, 60 cycle, alternating current.

Some of the principal items are as follows:—

- 19"x10' LeBlond Lathe, 3 step.
- 21"x12' LeBlond Lathe, 3 step.
- No. 3—24" Acme Turret Lathe, with motor, Universal.
- 24" Barnes Camel Back Drill.
- 3½" Fostick Radial, motor.
- 27-U Buffalo Motor Driven Universal Armor Plate Shear, Punch, etc. with motor.
- 125 Ton Chickemauga Wheel Press.
- 10—Motors.
- 2—24" Gisholt Turret Lathes, motor drive with motors.
- 9x9" Peerless Saw, with motor.
- 1½" Acme Bolt Cutter.
- No. 4 Williams-White Bulldozer.
- 100 lb. Mayer Bros. Hammer.
- 8x8" Pennsylvania Compressor with Motor.
- 51" Niles Vertical Boring Mill.
- Buss No. 4 30" Ball Bearing Double Surfacers.
- 25" Smith & Mills Motor Drive Shaper.
- Choice Lot of Woodworking Machines.
- Complete Foundry Equipment.

More than —50— Other Machines

The Norton-Broadway Machinery Co.
Sixth and Baymiller Streets, Cincinnati, Ohio

Unused "Mileage"

In K & T Factory Rebuilt Milling Machines

When you buy a "Milwaukee" Rebuilt you are not buying a used or worn out milling machine — you are buying unused mileage, measured in terms of dependable and accurate service.

Every used machine returned to the factory for rebuilding is stripped to the naked castings — every part is cleaned and checked for wear. The column, knee, saddle, and table are replaned or rescraped and all worn parts of the mechanism replaced. They are assembled on the same floor and by the same experts as new machines, and they carry the new machine accuracy guarantee.

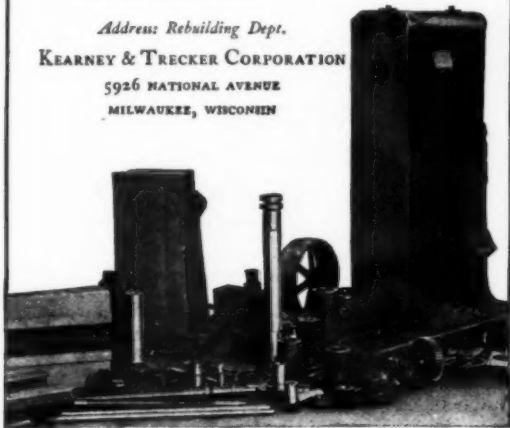
Factory Rebuilt K & T milling machines are like new, but cost much less. Send for catalog 33 and list of rebuilt Milwaukee Millers.

Address: Rebuilding Dept.

KEARNEY & TRECKER CORPORATION

5926 NATIONAL AVENUE

MILWAUKEE, WISCONSIN



Machines of Quality

MACHINES OF THIS TYPE ARE HARD TO FIND

- 20"x12' American Geared Head Lathe, taper attachment.
- 36"x14' Lodge & Shipley Triple Geared Lathe.
- 36"x16' L. & S. Geared Head Lathe, light pattern.
- 2A W. & S. Tur. Lathe. arr. for bar & chucking.
- 36"x36"x20' Pond Planer, 2 rail heads and one side head.
- 60" Brown & Sharpe Spur Gear Cutter.
- No. 255 Heald 12" Rotary Surface Grinder.
- 22" Pratt & Whitney Vertical Surface Grinder, 72" table,
large magnetic chuck and 3 new wheels.
- 12"x18" Cincinnati Plain Grinder.
- 10"x36" Norton Plain Grinder.
- 10"x50" Norton Plain Grinder.
- 14" Pratt & Whitney Vertical Surface Grinder.
- No. 2 Brown & Sharpe Universal Grinder.
- No. 4 16"x72" Cincinnati Universal Grinder.
- No. 16 Blanchard Floor Motor Drive Type Grinder,
30" magnetic chuck.
- 4' Cincinnati Plain Radial.
- No. 2 Colburn Mfg. Type Drill Press, 2-spindle.
- 6' Cincinnati Bickford Full Universal Radial.
- 4' American Radial, closed head type, s. p. d.
- No. 2 Baker Keyseater.
- No. 3 Cincinnati Vertical High Power Miller with rotary
table, power feed to rotary table.
- No. 3 Cincinnati High Power Miller s. p. d.
- No. 2A B. & S. Universal Miller, s. p. d. with div. head.
- No. 3-B B. & S. Heavy Plain Miller, s. p. d.
- 18" Cincinnati Plain Automatic Miller, s. p. d.
- 18" Cincinnati Duplex Automatic Miller, s. p. d.
- 60" King Vertical Boring Mill.
- 20" Gould & Eberhardt Shaper, cone drive.

THE MATCH & MERRYWEATHER MACHINERY CO.

CLEVELAND

DETROIT

CINCINNATI

PITTSBURGH

Mean Satisfactory SERVICE

Mechanics appreciate our
Rebuilt Machines.

Purchasers are protected by
our **guarantee.**

*We Have a Large Selected
Stock and Solicit Your
Inquiry.*

Warehouse and Shop Located at
888 East 70th St., CLEVELAND, OHIO
The Motch & Merryweather Machinery Co.

REAL VALUES

RADIALS AND UPRIGHT DRILLS

7¹ Fostick Plain, cone pulley.
6¹ & 5¹ Cinti-Bickford Pl., g. b. d., late.
6¹, 5, 4¹ & 3¹ American Triple Geared,
Plain, g. b. d.
6¹ N.-B.-P. and Semi-Universal, g. b. d.
4¹ & 2½¹ Morris Plain, gear box drive.
4¹ Drees Hi-Duty Plain, gear box drive.
2¹ American Tr. Geared Plain, cone pulley
4¹ Hammond b. b. Sensitive.
3¹ American b. b. Sensitive.
36¹ & 32¹ Aurora Upright, tapping att.
34¹, 28¹, 26¹ & 22¹ Aurora Upright late
28¹ Prentice Bros. Upright.
25¹ & 21¹ Superior Upright.
25¹ Weigle Upright, latest type.
25¹ Fostick Upright, latest type.

24¹ Cinti-Bickford Upright, tap. att.
24¹ Aurora Upright, latest types.
21¹ Weigle Upright, tap. att.
No. 310 Baker Bros. Heavy Duty.
No. 17 Foote-Burte 3-spdl. Hvy. Duty.
No. 220 Baker Bros. 2-spindle, H. D.
index table.
6-sp. Nat'l-Acme Horiz. Auto. Driller.
21¹ Hoefler 6-spindle Gang.
22¹ W. F. & J. Barnes 4-spindle Gang.
No. 2 Avey 4-sp., b. b., power feed.
No. 2 Avey 2-spindle, ball bearing.
1, 2, 3, & 4-sp. Allen b. b. No. 2 M.T.
3 & 4-sp. Henry & W. b. b., (Class B).
No. 30 Natco Multiple, equipped 40-sp.
No. 3 Bausch Mult., equip. 19-spindles.

ENGINE AND TURRET LATHES

36"x40¹ Johnson Tr. Grd., st. change.
36"x38¹ Bridgeford grd. hd., q. c., t. a.
30"x26¹ N.-B.-P. Standard Change.
36"x20¹ Bridgeford Grd. Hd., q. c.
36"x16¹ American Hi-Duty, G. H., q. c.
36"x16¹ Lodge & S. Sel. Grd. Hd., q. c.
25"x50¹ 18¹ LeBlond q. c., sl bed, ex. gap
24"x14¹ & 24"x12¹ Cisco G. H., q. c., new
26"x12¹ Pittsburgh quick change.
24"x12¹ American Tool Wks. q. c.
24"x10¹ Greaves & Klusman q. c.
20"x10¹ L-Blond quick change.
20"x12¹, 20"x10¹ & 20"x8¹ Cisco Grd.
Head, quick change, brand new.
20"x8¹ Hendey Grd. Hd., q. c., t. a.
18"x10¹ Boye & Emmes quick change.

18"x8¹ L. & S. Sel. Grd. Hd., q. c.
18"x8¹ Cisco Grd. Hd., q. c., brand new
16"x10¹ Lodge & Shipley q. c., late.
16"x8¹, 16"x6¹ & 14"x6¹ L. & S. q. c. late
16"x6¹ Rahn-Larmon quick change
14"x6¹ American Hi-Duty, q. c., late.
14"x6¹ Reed-Prentice, Grd. Hd., q. c.
Nos. 3-A & 2-A W. & S. Universal
Hollow Hex. Turret.
24¹ & 21¹ Gisholt Turret, t. a., late.
3"x36¹ Jones & L. Turret, chk. equip.
3"x36¹ J. & L. dbl. sp. Tur., chk. equip.
3¼"x36¹ Acme Grd. Hd. Turret, chuck.
Nos. 1, 2 & 6 Warner & Swasey Turret.
Nos. 2 & 4 Millholland Turret.
Nos. 4 & 4½ Bardons & Oliver Turret.

GEAR MACHINERY AND GRINDERS

No. 34 B. & S. Gear Hobbers, late type.
Nos. 12 & 3 Barber-C. Gear Hobbers.
No. 18-H G. & E., Hi-Duty Gr. Hob.
No. 5-A Lees-Bradner Gear Hobbers.
Nos. 6 & 61 Fellows Gear Shapers.
No. 5-48¹, No. 4-48¹ & No. 3-26¹ Brown
& Sharpe Auto. Spur Gear Cutters.
6¹, 11¹ & 18¹ Gleason Bevel Gr. Generat.
No. 16-26¹ Blanchard Vert. Surf., b. d.
14¹ P. & W. Vert. Surf., b. b. sp., mag. chk.
12¹ P. & W. Vert. Surf., rot. mag. chk.
No. 2 Wilmarth & M. Auto. Surface.
No. 3 B. & S. Planer type Surface.
No. 22, 12¹ Heald Rotary Surface.
Walker single stroke Vertical Surface,

No. 70 Heald Int., clutch in head.
Nos. 70 & 75 Heald Internal.
Capitol Internal Grinder.
No. 120 Gardner Double Disc.
No. 4, 23¹ & No. 8, 40¹ Gard. Disc.
No. 60 Heald Cylinder.
6"x32¹ & 10"x36¹ Norton Plain, late.
6"x18¹, 10"x36¹ & 10"x52¹ Landis Pl.
Self Contained
No. 11 B. & S. Plain, self-cont., late.
No. 2-12"x36¹ Cincinnati Plain, late.
8"x30¹ M. dern Plain, self-contained.
No. 13 B. & S. Univ. Tool & Cutter.
No. 1½ Cincinnati Univ. Tool & Cutter
No. 1 LeBlond Universal Tool & Cutter.

EASTERN MACHINERY CO

We also Buy machinery

Rebuilt and Guaranteed Machine Tools

MILLING MACHINES

No. 4 Hendey Univ., single pulley, comp.
Nos. 3 & 2 B. & S. Univ., c. p., compl.
Nos. 3 & 1 Kempsmith Univ., c. p. comp.
No. 1½ Cinti. Univ., c. p., complete.
No. 1-B LeBlond Univ., c. p. complete.
No. 4 Cincinnati H. P. Plain, arr. for motor drive, power rapid traverse, late.
No. 2 Cinti. H. P. Plain, s. p., late.
No. 4 Cinti. H. P. Plain, c. p., late.
No. 3 Ohio Hvy. Plain, c. p., p. r. t.
No. 3 B. & S. Plain, cone p., p. r. t.
Nos. 3, 2 & 1½ Cincinnati Plain, c. p.
Nos. 3 & 1 Kempsmith Pl., cone pulley.
No. 3 Hendey Plain, cone pulley.
Nos. 2-H & 1½ Brown & S. Pl., c. p.

Nos. 2½ & 2 LeBlond Pl., cone pulley.
No. 2 Knight Milling and Drilling.
No. 3 Toledo Vertical, s. p. d.
Models "B" & "C" Becker Vert. Cont.
48" & 24" Cincinnati Auto. Duplex.
28" Cincinnati Semi-Automatic.
No. 33 Kempsmith Manufacturing.
24" Cincinnati Automatic.
18" Cincinnati Plain Manufacturing.
14" Cincinnati Semi-Automatic.
Gooley & Edmund (Briggs type) Mfg.
No. 3½ Fox Hand and Power.
No. 2 Pratt & Whitney Hand & Power.
No. 6 Whitney Hand.

SHAPERS AND PLANERS

26" 24" & 20" Kelly H. D., b. g. Cr.
25" S. & M. Hvy Duty, B. G. Crank.
24" Queen City H. D., B. G., Crank late.
24" Cinti. H. D., B. G. Crank, m. d. g. b.
24" & 20" Walcott H. D., B. G. Crank.
24" Stockbridge H. D., B. G., Crank.
20" Milwaukee H. D., B. G. Crank.
20" Amer. H. D., B. G. Crank, S. P.
20" Cinti. H. D., B. G., Crank, S. P.
24" & 16" Barker h. d., b. g., Crank.

16" Columbia H. D., B. G. Cr. arr. m. d.
16" Amer. H. D. Univ. B. G. Crank, s. p. d., pwr. down feed, rev. table, tilting table top.
16" Hollingsworth H. D., B. G., Crank.
24" Cincinnati Crank Planer.
24"x24"x10" Liberty, 1 head.
30"x30"x10" American, 1 head.
33"x33"x8" Ohio, 2 heads.
54"x54"x26" Niles-Bement-Pond, 3 hds.

MISCELLANEOUS

Automatics, Nos. 5-A and 6--A Potter & Johnston, late types.
Bolt Threading Mch., 2½" Landis l. s.
Boring Mill, No. 1 Barrett Horizontal, 3" diameter bar.
Boring Mill, No. 2½-A Universal Horizontal, 2½" diameter bar.
Boring Mill, Rockford Horizontal, 3½" diameter spindle.
Boring Mill, 72" Bickford Vert., 2 hds.
Boring Mill, 51" Bullard Vertical, 2 hds.
Boring Mill, 36" Bullard Rapid Prod. Vertical, turret and side head.
Boring Mill, 30" Gisholt Vertical, turret head, power rapid traverse.
Broaching Machines, Nos. 2 and 3 J. N. LaPointe, late types.
Chucking Machines, Nos. 22, 23 & 24 New Britain Automatic.
Die Sinks, Nos. 2 and 3 Pratt & W.

Hack Saw, 13"x16" Peerless H.S. Pwr. Hammers, 40 and 60 lb. Bradley rubber cushioned helve.
Hammers, Nos. 5-A, 3-A and 2-A Hvy. Duty Hi-Speed Riveting.
Keyscater, No. 1 Davis, arr. for m. d., cap. 1" keyways.
Lathes, Nos. 6 & 9 LeBlond Multi-Cut. Press, No. 21½ Bliss O.B.I. Grd. Pwr. Press, No. 6 Toledo O.B.I. Grd. Pwr. Press, P. G. No. 6 Ferr. Grd. Power. Press, No. 83-C Michigan Dbl. Crank Grd. Power, 42" between uprights.
Shear, No. 511-E Toledo Power Gap Sq., cap. 73" long, 11 gauge.
Tapping Machines, Nos. 1, 2 & 3 B. G. Garvin Automatic.
Thread Millen, 6"x14", 6"x80" P. & W. Welder, Spot, Federal Electric, cap. 2 pieces of ½".

And Many Others. Send Us Your Inquiries.

61 Spring Grove Ave., CINCINNATI, O.
What have you to Sell?

Bath's Guaranteed

Bolt and Nut and Forging Machinery

- $1\frac{1}{2}$ "-1"-2"-2 $\frac{1}{2}$ "-3" and 4" Ajax steel bed upsetters.
- 2"-3"-3 $\frac{1}{2}$ "-5" Acme steel bed upsetters.
- 2" Ajax iron bed upsetter geared, with side shear.
- 4-slide cotter pin making machines.
- $1\frac{1}{4}$ " and $\frac{3}{8}$ " Waterbury-Farrel D. S. O. D. cold headers.
- No. 3 Manville S.S. S.D. cold header, cap. $\frac{3}{8}$ "x3".
- No. 5 Waterbury-F. S. S. S. D. cold header, cap. $\frac{3}{8}$ "x2" to $\frac{3}{4}$ "x4".
- $\frac{3}{8}$ " Waterbury-Farrel cold pressed nut machine.
- 6-spindle Acme semi-automatic nut tapper $\frac{1}{2}$ " capacity.
- Rickert & Schafer tapper.
- $\frac{3}{4}$ " Economy automatic bolt pointers and threaders.
- $1\frac{1}{4}$ " Landis triple head bolt cutter, m. d.
- Nos. 1 and 6 Williams & White bulldozers.
- $\frac{1}{2}$ " Shuster wire straightener.

Boring Mills—Horizontal

- $3\frac{1}{2}$ " bar P. & H. motor drive.
- 4" bar Landis, floor type.
- 4" bar Bement, table type.
- $4\frac{1}{2}$ " bar Niles, floor type.
- $5\frac{3}{8}$ " bar D. & H., floor type.
- $5\frac{1}{2}$ " bar Niles, floor type, belt dr.

Boring Mills—Vertical

- 42" King r. p. t., motor drive.
- 44" Baush, 2 heads, belt drive.
- 51" Niles-Bement-Pond, single pulley drive.
- 72" Sellers, rapid traverse, arranged motor drive.
- 14" and 16" Niles, two heads.
- 12" Betts, heavy duty, motor drive.
- 10"-16" Bement-Miles, with extension head.
- 10"-16" Niles, 2 heads, friction feed.
- 10"-16" Niles heavy duty with extension head.
- 16"-24" Niles with central extension head.

Drills

- 6" American triple purpose radial.
- 21" Cincinnati-Bickford, arr. motor drive.
- 22" Barnea, sliding head, back geared.
- 23" Rockford, back-geared, geared feed.
- 24" Kokomo, sliding head, back geared.
- 24" Reed-Prentice, sliding head, back geared.
- 25" Silver, sliding head, back geared.
- 3-spindle Henry & Wright B. B. sensitive.
- 4-spindle Barnes gang drill; 4-spindle Foote-Burt.
- 6-spindle Moline cylinder borer.
- No. 11 Natco 8-spindle multiple.
- No. 25 Foote-Burt heavy duty, 3" capacity.

Gear Cutters

- 72" Gould & Eberhardt gear cutter, arr. m. d.

Grinders

- 10"x24" Landis, self-contained.
- 10"x52" Landis, plain, self-contained.
- No. 2 Gardner, ball bearing disc, belt dr. 18".
- No. 2 Gardner, plain disc, belt drive. 18".
- No. 24 Gardner, disc grinder, motor drive, 52".

Hammers

- 100-lb. Bradley, horizontal helve.

CYRIL J. BATH & CO., E. 70th & 1st Ave.
Cable Address: **CYBATH**

Cleveland Stock

Lathes

- 16"x8' Monarch, quick change gear, back geared.
- 17"x8' Sidney, quick change, double back geared.
- 18"x8' Prentice, geared head.
- 42"x30' center Lodge & Shipley, selective head.

Milling Machines and Keyseaters

- Type B Briggs Lincoln millers, table 54"x11½".
- 20"x7"x18" Oesterlein plain, belt drive.
- No. 0 Rockford, plain, table 30"x7½".
- No. 1 Kemp Smith, plain belt drive 22"x8x19".
- No. 3 Brown & Sharpe, vertical.
- No. 6 Becker vertical miller.
- Type B Becker vertical, S. P. D.
- Newton duplex milling machine, 14' table.
- No. 2 Baker Bros. keyseater, 2" cap. automatic feed.

Planers and Shapers

- 42"x42"x16' Detrick & Harvey openside planer with rev. m. d.
- 48"x48"x16' Cincinnati, 4 heads.
- 96"x96"x16' Pond, 4 heads, belt drive.
- 96"x96"x18' Ridgway, motor drive.
- 48"x96"x20' Detrick & Harvey openside, removable side head.
- 36" Morton draw-cut shaper.

Punches and Shears

- 48" throat Bement-Miles, arch. jaw, 1¼"x1".
- 2" Garrison steel bed alligator shear.
- ¼" Niagara circle shear.
- No. 4 Quickwork rotary shear, ⅝" cap., with 48" thrt. circle att.
- 12"x¼" Poorman, motor drive.
- 10"x⅝" Hilles & Jones squaring shear.
- Scully splitting shear.
- 10"x⅝" Ohl brake, arranged for motor drive.

Riveters

30 ton, 6' Hanna gap.

36"x20" Allen, ¾" capacity.

Rolls

- 10"x¾" Cleveland bending, like new.
- 16"x1½" Hilles & Jones, very good.

Slotters

20" & 36" Bement crank, cone dr. 48" Niles-Bement-P., motor drive.

Turret Lathes and Screw Machines

- No. 1-B Foster, universal, geared head.
- 3"x36" Jones & Lamson, geared head.
- 18" Libby turret lathe, geared head.
- 24" Gisholt, belt drive 4¼" hole in spindle.
- 24" Gisholt belt drive 6¼" hole in spindle.
- 24" Gisholt motor drive 6¼" hole in spindle.

MISCELLANEOUS

- AJAX reclaiming rolls.
- Nos. 1 & 2 Buffalo Forge blowers.
- 15-ton 51'10" span Niles crane.
- No. 5 Con. inc. punch press, 2½" st.
- 4" st. Excelsior straight side press.

- 400-ton Niles wheel press, 96".
- No. 4-B Cochrane-Bly cold saw.
- 4" Oester pipe machine.
- No. 3½ Greenerd arbor press.
- No. 3 Garvin profiler.

Machinery Av., N. E., Cleveland, O.
ATHCO—Cleveland

ReMANUFACTURED - (ORIGINATED BY US) - MACHINE TOOLS

REG. U. S. PAT. OFF.

Largest

Our Guarantee

PARTIAL LIST

Lathes

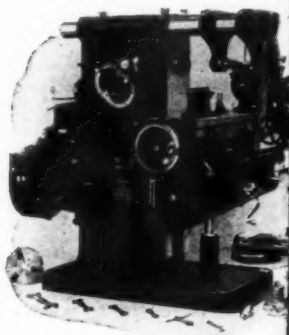
- 1-60"x21' Putnam.
- 1-56"x16' Lodge & Shipley.
- 1-48"x24' Pond.
- 1-42"x71' American Grd. Hd.
- 1-42"x26' American Grd. Hd.
- 1-36"x71' American Grd. Hd.
- 1-36"x34' American Grd. Hd.
- 1-30"x12' L. & S. Sel. Grd. Hd.
- 5-26"x18' Niles-Bement-Pond.
- 10-26"x16' Bridgeford.
- 5-26"x14' Niles-Bement-Pond.
- 5-26"x12' Bridgeford.
- 40-26"x10' Niles-Bement-Pond.
- 15-26"x10' Whitcomb-Blaisdell.
- 44-26"x10' Bridgeford.
- 9-25"x12' LeBlond.
- 5-20"x22"x15' American.
- 6-20-22"x8' American.
- 1-19"x12' LeBlond Grd. Hd.
- 4-16"x8' L. & S. Sel. Grd. Hd.
- 3-16"-18"x8' American Grd. Hd.
- 1-16"x 8' Hendey.
- 1-16"x10' Sundstrand Mfg.
- 1-14"x8' Lodge & Shipley.
- 5-34" Fitchburg Loswing.

Auto. Screw Machines

- 7-No. 6-A Potter & Johnston.
- 7-No. 5-A Potter & Johnston.
- 2-1"x5" and No 33 New Britain.
- 3-No. 52 National Acme.

Turret Lathes

- 1-26" Libby. 3-21" Gisholt.
- 10-24" Steinfelt. 4-24" Gisholt.
- 1-No. 3-A Warner & Swasey.
- 1-No. 3 Cincinnati-Acme Univ.
- 2-No. 6 Brown & Sharpe.
- 1-No. 2-B Foster.
- 3-3"x36" Jones & Lamson.
- 4-2-spindle Jones & Lamson.
- 1-16" Cincinnati-Acme-Fox.
- 1-14" Warner & Swasey.



Radial Drills

- 1-24" Gang Geared.
- 1-3" American 1-4' Bickford.

Vertical Boring Mills

- 1-14'-20' Niles Extension.
- 1-10' Niles; 1-72" Niles.
- 1-96" Betts.
- 1-72" Cincinnati. 1-72" Bickford.
- 1-61" Baush. 1-51" Baush.
- 1-54" Bullard. 1-51" Bullard.
- 2-48" Colburn; 1-42" Colburn.
- 2-42" Gisholt. 3-42" King.
- 1-36" Bullard, Rapid Production.
- 2-36" Gisholt. 2-32" King.
- 1-30" Gisholt. 1-30" Flather.

Horizontal Boring Machines

- 1-No. 12 P. & H.
- 1-5" Bar Ingersoll.
- 4-No. 1 Barrett. 2-Rock'd 2" bar.
- 1-No. 3 Barnes.

Phone
HAYmarket
7660

HILL, CLARKE & CO. OF

Selection in the Country Ready to Produce

our money back if you return a machine
within thirty days. No excuses necessary.

Screw Machines

- 1—No. 1 13/16" Foster.
- 1—No. 6 2 1/2" Warner & Swasey.
- 1—No. 10 3" Bardons & Oliver.
- 2—No. 8 3/4" Warner & Swasey.

Drill Presses

- 1—No. 12-C Fox.
- 1—No. 13 Natco.
- 1—No. D-31 Fox.
- 1—No. 17 2-spindle Foote-Burt.
- 1—No. 4 6-spindle Foote-Burt.
- 1—No. 4 4-spindle Foote-Burt.
- 1—6-spindle H. & W.
- 1—4-spindle Allen.
- 1—2-spindle H. & W.
- 1—22" Barnes, Self Oiling.

Gear Cutters and Hobbers

- 1—No. 5 60" Brown & Sharpe.
- 3—No. 36-H Gould & Eberhardt.
- 1—36"x14" G. & E.
- 1—No. 715 Fellows.
- 2—No. 3-26" Brown & Sharpe.
- 4—No. 12 Barber-Colman.
- 5—No. 6 Fellows.
- 1—No. 3 Barber-Colman.

Milling Machines

- 1—No. 5 Cincinnati.
- 3—No. 3 Cincinnati.
- 2—No. 3 Brown & Sharpe.
- 1—No. 2 B Milwaukee.
- 4—No. 2 Brown & Sharpe.
- 1—No. 1-B Milwaukee.
- 1—No. 21 Brown & Sharpe.
- 3—No. 26—Ohio.
- 12—No. 25 Becker.
- 2—No. 2-Y Brown & Sharpe.
- 1—No. 2-B Milwaukee Universal.
- 1—No. 2-M Cincinnati Universal.
- 1—No. 3 Garvin Duplex.
- 4—Type B Briggs.

Vertical Millers

- 2—No. 6 Becker.
- 1—No. 5 Brown & Sharpe.
- 1—No. 5 Becker.

- 2—No. 2 Cincinnati.
- 1—No. 2 Brown & Sharpe.

Slab Millers

- 1—24"x13"x20' Ingersoll.
- 3—24"x24"x12' Ingersoll.
- 1—36"x36"x7' Newton.
- 1—45"x17 1/2' Ingersoll.
- 1—50"x20' Ingersoll.

Planers

- 1—72"x84"x12' Gray.
- 1—60"x48"x12' N.-B.-P.
- 1—48"x48"x10' Gray.
- 1—48"x48"x16' Niles - Bement - Pond.
- 3—36"x36"x18' Cincinnati.
- 2—36"x36"x8' Ohio.
- 1—26"x26"x10' Gray.
- 2—24"x24"x6' Gray.

Presses.

- 1—No. 4 R. & K.
- 1—No. 4 Walsh.
- 1—No. 54 Bliss.
- 1—No. 73 1/2 Bliss.
- 1—No. 10 Z. & H. Percussion.
- 1—No. 59 Toledo.

Grinders

- 1—26—37 1/2"x36" Norton Gap.
- 1—18"x36" Norton.
- 2—16"x50" Norton.
- 1—14"x72" Norton.
- 4—14"x50" Norton.
- 1—12"x120" Landis.
- 1—10"x120" Norton.
- 1—10"x72" Norton.
- 1—10"x52" Landis.
- 6—10"x50" Norton.
- 1—No. 14, 10"x18" B. & S.
- 4—10"x24" Norton.
- 2—10"x36" Norton.
- 3—No. 12 1/2x36" B. & S.
- 7—6"x32" Norton.
- 1—18" Diamond Face.
- 1—No. 22 Heald Rotary Surface.
- 1—18" Graham Surface.
- 1—No. 60 Heald.
- 9—No. 70 Heald.
- 1—Bath Universal.

CHICAGO

645 W.
Washington
Boulevard,

CHICAGO, ILL.

Cable
Address
Remand

The Strong, Carlisle & Hammond Co.

Reputation and Quality Used and Rebuilt Machinery

Partial list herewith-

CENTERING MACHINES

Centering machines, single spindle Cadillac.

ENGINE LATHES

- 12"x 5' Hendey, c. r. and t. a. with draw-in attachment.
- 12"x 6' Seneca Falls tool room.
- 14"x 6' Porter, compound rest and taper attachment, l. c. g.
- 14"x 6' Monarch, 3 step cone, d. b. g., c. r. and t. a. with draw-in attach.
- 16"x 8' Hendey, c. r. and t. a. with draw-in attachment.
- 16"x 3' Rockford, 3 step cone, d. b. g., c. r. and t. a., semi quick change.
- 18"x 8' Boye & Emmes q. c. g., s. b. g.

- 16"x 8' Monarch, compound rest, standard pattern.
- 16"x 8' Bradford, c. r., l. c. g.
- 18"x 8' Cincinnati, q. c. g., taper, draw in.
- 16"x 8' Walcott, c. r., q. c. g.
- 18"x 10' Walcott, 3 step cone, d. b. g., semi quick change.
- 20"x 10' Walcott, 3 step, q. c. g.
- 24"x 20' Lodge & Shipley, q. c. g.
- 32"x 28' Bullard Standard Lathe arranged for variable speed mtr. dr.

TURRET LATHES AND SCREW MACHINES

- 1' Foster, plain head, a. c. and b. f.
- No. 3 Foster g. f. h. turret screw mch., with p. f. carriage and turret.
- No. 3, 1 1/2" Woods tilted turret.
- 1"x 7" Millholland, p. h., a. c. & b. f.
- No. 55 Nat'l Acme 4-spd. auto.
- 12" W. & S., friction head.
- No. 2 Warner & Swasey, p. h., a. c. and b. f.

- No. 4 Warner & Swasey, g. f. h., a. c. b. f., power feed turret.
- No. 4 Warner & Swasey Friction Hd. Universal Tur. Screw Mche.
- No. 4 Warner & Swasey Friction Head, auto. chuck, hand feed.
- No. 6 Warner & Swasey friction head, auto chuck, h. f. t., (2).
- No. 8 Warner & Swasey Friction Hd.

DRILLING MACHINES

- 20" Barnes Plain Lever Feed.
- 20" Hamilton Sta. Hd., b. g. and p. f.
- 20" Barnes "Camel Back".
- 22" Sibley Sliding Head, b. g. and p. f. with t. a.
- 26" Barnes Sliding Hd., b. g. & p. f.
- 28" Barnes Sliding Head, b. g. and p. f. with t. a.
- 3' Western Gear Box, single pulley drive with t. a.
- 4' Mueller, gear box, sgl. pulley dr.
- 5' American Universal with gear box belt drive.
- No. 310 Baker Heavy Duty.
- No. 40 Natco Straight Line Multiple Spindle Drill, 3-spindle head with two speeds in head.

- No. 2 Baush Multiple Spindle with 8-1-4" spindles.
- Gordon single-spindle, h. s., b. b.
- 2-spindle Allen, h. s., b. b.
- 4-spindle Allen, h. s., b. b.
- 6-spindle Allen, h. s., b. b.
- 12-spindle Moline, cam feed, two table.
- No. 30 Natco, belt driven.
- No. 44 Colburn, sgl. sp. heavy duty, - 2 1/2" cap., with solid sp. and flange for receiving multiple drill heads, new, (2).
- No. 34 Demco high speed bench drill with C spindle, new.
- Footo Burt 1-spindle heavy duty, (2).
- 3' Corley Plain Arm Radial.

The Strong, Carlisle & Hammond Co.

Hammond Company Warranty Back of Every Machine Tool

Let us have your inquiries.

MILLING MACHINES

No. 6 Whitney hand, (2).
No. 1 Toledo hand millers, (2).
No. 0 Bickett, hand, bench type, (2).
No. 2 Garvin Duplex Slotter or Miller.
No. 1½ Milwaukee univ. mtr. driven, dividing head, vertical and slotting attachments.

No. 6 Becker vertical.
Becker 2-spindle, with rotary table.
Briggs Type "A" motor driven with motor.
No. 1½ Cincinnati cone drive, plain.
No. 1½ Milwaukee plain.
No. 3 Brown & Sharpe Plain, cone drive, with taper nose spindle, (2).

SHAPERS AND PLANERS

20" Hendey friction, (2).
16" Smith & Mills b. g., crank.
16" Smith & Mills plain, crank.
16" Gould & Eberhardt, back geared, crank.
25" Smith & Mills Back Geared Crank.

18" Gould & E., b. g., crank, (2).
22"x22"x 5' Putnam planers, (2).
38"x38"x10' Pond, 2 heads on rail.
26"x30"x6' Cleveland open side one rail head, one side head, new.
48"x60"x16' Cleveland open side, two heads.

GRINDERS

30"x84" Diamond Face Grinder, belt driven.
No. 3 Diamond wet tool grinder with drop apron, new.
No. 4 Diamond wet tool grinders with drop apron, new.
No. 6-A Bryant internal.
Webster & Perks, h. s., b. b., double spindle polishing lathes, cabinet base (6).

No. 3 Brown & Sharpe planer type.
No. 11 Brown & Sharpe pl. grinders.
No. 14-48" B. & S. plain, (2).
No. 3 Modern universal.
Gisholt universal form tool grinder.
Type "DE" Hissey-Wolf internal.
C3A Grand Rapids duplex drill grinders with wet att., new.
Landis Internal, with countershaft.

MISCELLANEOUS

Arbor press, No. 3 Geier.
Arbor press, No. 28 Atlas.
Boring and Turning Mill, 52" Bullard.
Vertical 2 swivel heads, motor dr.
Cold saw, No. 6 Cochrane-Bly, m.d.
Hand brake, 5' Drei- & Krump.
Pipe machine, No. 300 Oster, ½" to 2".

Pipe machine, 8" Jarecki, No. 88.
Power Press, Max Arms S. S. Plain, 5" stroke, on inclined legs.
Slotter, No. 2 Garvin Duplex.
No. 3 Rockford plain.
Tappers, No. 2-X Garvin, (2).
Tappers, ½" Rickert-S. vertical, (2).

Cleveland, Ohio; Detroit, Michigan

High Grade Tools

Priced Right

Mills

- 2—No. 1 Brown & Sharpe univ. cone.
- 1—No. 1 Cincinnati univ. cone.
- 2—No. 2 Cincinnati univ. cone.
- 2—No. 2 Brown & Sharpe plain cone.
- 1—No. 2 Cincinnati all geared high power plain s. p. d.
- 1—No. 25 Ohio Oesterlein univ. cone
- 1—No. 3 Brown & Sharpe vert all geared s. p. d.
- 1—No. 4 LeBlond plain cone.
- 1—28" Cincinnati semi-automatic.
- 5—Gooley & Edlund mfg. mills all sizes.
- 3—12" Cincinnati mfg. mills.
- 1—28" Bullard vert. boring mill.

Lathes

- 2—14"x6" Bradford, q. c.
- 1—14"x6" Hendey yoke head engine lathe, std. equipt.
- 1—14"x6" Monarch engine lathe, standard equipment.
- 1—14"x6" LeBlond q. c. eng. lathe.
- 1—16"x6" Monarch q. c. eng. lathe.
- 1—16"x8" Lodge & Shipley g. h., s. p. d.
- 1—17"x8" LeBlond prod. lathe.
- 1—18"x6" Hendey cone q. c. g.
- 1—18"x8" Schumaker & Boye q. c. g.
- 1—18"x8" American q. c. eng. lathe.
- 1—18"x6" Rahn Mayer s. c. eng.
- 1—18"x10" Lodge & Shipley g. h.
- 1—20"x8" Hendey cone q. c. g.
- 1—20"x10" Monarch q. c. g.
- 1—28"x56"x16" McCabe dble. spd.

Shapers

- 2—16" Gould & Eberhardt belt drive back geared shapers.
- 1—16" Ohio b. g. shaper.
- 1—20" Kelley b. g. shaper, belt drive.
- 3—20" Gould & Eberhardt b. g. belt drive shapers.
- 1—24" Gould & Eberhardt shaper m. d. & m.
- 2—24" Gould & Eberhardt b. g. belt drive shapers.

- 1—30"x30"x8" Gray planer, 2 heads on cross rail.
- 1—30"x30"x8" Cincinnati planer 2 hds. on cross rail.
- 1—36"x36"x10" Bickett iron planer 2 heads on cross rail.

Grinders

- 1—14x72" Landis self contained m. d. grinder.
- 1—Thompson 10x36" univ. grinder.
- 2—No. 2 Brown & S. univ. grinder.
- 2—No. 2 Brown & Sharpe vertical surface grinders.
- 1—No. 3 Brown & S. univ. grinder.
- 2—No. 10 Brown & S. pl. grinders.
- 1—No. 10 Bryant internal grinder.
- 1—14x36 Queen City plain self-contained grinder.
- 4—No. 65 Heald cylinder grinders.
- 1—Reed Prentice vert. surf. grinder.
- 4—7½ h. p. U. S. heavy duty m. d. snagging grinders.
- 3—No. 132 Arter auto. prod. grinders.

Drills

- 1—No. 314 Baker heavy duty drill.
- 1—No. 315 Baker heavy duty drill.
- 1—4 spd. Colburn No. 2 s. p. d. drill.
- 1—No. 2 Avey 2 spd. power fd. drill.
- 1—Rockford H. D. all geared drill.
- 1—No. 24 Foote Hurl s. p. drill.
- 1—No. 65 D-5 Moline holehog 9 spindles drill.
- 1—No. 1 Bausch 16 spdl. mult. drill.
- 1—Fox 8 spdl. multiple drill.
- 2—Barnes horiz. radial drills.
- 3—4 spdl. Allen high speed drills.
- 2—4 spdl. Avey high speed drills.
- 1—3 spdl. Leland & Gifford high speed drill.
- 1—28" Aurora sliding head drill.
- 1—32" Cincinnati sliding head drill.
- 1—36" Aurora sliding hd m. d. drill.
- 1—4" American enclosed head radial drill.
- 2—No. 14 Colburn drills.
- 2—2 spdl. Henry & Wright h. s. b. b.
- 1—6" American enclosed head radial.
- 2—Detroit automatic drillers.

(Continued on Top Half of Next Page)

(Continued from Preceding Page)

Presses

- 1—No. 2 Bliss consolidated plain o. b. i. press.
- 1—No. 4 Consolidated plain o. b. i.
- 4—No. 35 Niagara solid back plain flywheel presses.
- 1—No. 40 Bliss plain horning press.
- 1—No. 54 Toledo s. s. plain press.
- 1—No. 55 Toledo s. s. plain press.
- 1—No. 857 Toledo rack & pinion press

Turret Lathes and Screw Machines

- 2—Jones & Lamson double spindle flat turret lathes.

- 1—28" Gisholt 3 $\frac{1}{2}$ " spindle.
- 2—No. 2 Warner & Swasey hand screw machines.
- 3—No. 4 Warner & Swasey hand screw machine friction head.
- 2—No. 6 Warner & Swasey friction head hand screw machine.
- 2—No. 4 Bardons & Oliver friction head turret lathes.
- 4—18" Springfield fox Monitor lathes
- 2—4" Gridley multiple spindle. auto. screw machine.
- 2—3" Gridley multiple spindle automatic screw machines.
- 1—4" Gridley multiple spindle automatic screw machine.

Let us tell you what we can furnish on your requirements. Every machine sold under a full guarantee.

Riverside Machinery Depot

251 St. Aubin Ave.,

Detroit, Mich.



The Blue Book

Goes to the Heart of 96% of
the Best Plants in the Country

The above statement is the result of careful mail inquiries directed to thousands of the larger tool-using concerns.

High Grade Machine Tools

Boring Mills

- 1—Bullard 42" Vertical.

Broaches

- 1—LaPointe No. 4 Hydr. D.M.D.
- 3—LaPointe Nos. 1-2 and 3.

Drills

- 3—Avey Nos. 1½ H. S. S. S.
- 4—Sipp 16" High Speed S. S.
- 2—Acme 6D Semi-Auto. Drilling.
- 1—American 26" S. S.
- 7—Aurora 21-24" S. S.
- 2—Barnes Camel back 24".
- 6—Cincinnati 21-26" S. S.
- 1—Rockford 21" sliding head.
- 1—Leland-Gifford 10" H. S., Sens.
- 1—Minster D No. 1.
- 3—Superior 20"-26" S. S.

Drills—Multiple

- 1—Avey No. 1½ 2-sp. High Speed
- 1—Kingsbury 4-sp. Horiz. D.M.D.
- 1—Rockford, 4-spindles.
- 2—G. & E. 2-spindle High Speed.
- 1—Pratt & Whitney 12-spindle.

Gear Shapers

- 8—Fellows No. 6 and 36".

Grinders

- 19—Norton Pl. Ext. 6x32, 10x24, 10x36, 10x50, 10x72, 14x72.
- 13—Heald Int. Nos. 60-65-70-75.
- 1—Bealy No. 14 Disc.
- 1—Bealy No. 6 Dbl. End. Auto.
- 1—Gardner Disc.
- 1—Brown & Sharpe Universal.
- 2—Rivett No. 205 Radial.
- 1—Rivett Univ. No. 6 Internal.
- 2—Landis No. 3 Universal.
- 1—B. & S. No. 11 Plain Ext.
- 3—Bryant Chuck. Nos. 6 & 15A.
- 1—Bealy No. 17 double end.

Lathes—Engine—Miscellaneous

- 1—Hamilton, 16x6, B. G., Q. C.
- 5—Lodge & Shipley 16x6, 18x8, 20x10, 22x10, B. G., Q. C.
- 1—Sidney 20x10, B. G., Q. C.
- 2—LeBlond 17x12, 21x12, B. G., Q. C.
- 5—Greaves & Kluunan 18x6, 18x8, 30x8, B. G., Q. C.
- 3—Chard 16x6&24x11 B. G., Q. C.
- 4—American 14x6, 16x6, 18x8 B. G., Q. C.
- 1—L. & S. Duplex 12x24" Cr. Pin.
- 1—G. & L. 18x8 B. G., Q. C.
- Sidney 14x6" B. G., Q. C., T. A.

- 1—Bradford 16" B. G., Q. C., T. A.

- 1—Monarch 16x6 B. G., Q. C.

Lathes—Turret and Screw Mchs.

- 4—Foster No. 1-B—20" swing.
- 2—Gisholt No. 2, D. M. D.
- 2—Gisholt No. H21.
- 1—Warner & Swasey No. 6.
- 1—Millholland 1" D. M. D.
- 2—Pratt & Whitney 20".
- 1—B. & O. No. 4.

Milling Machines—Vertical

- 2—Becker No. 5 and No. 6.

Milling Machines—Horizontal

- 1—Milwaukee No. 3B Double overarm, Vertical Head.
- 1—No. 2 Cincinnati Universal.
- 2—Brown & S. No. 2B and 12.
- 1—Steptoe Hand with Vert. Att.
- 1—Whitney No. 6 Hand.
- 1—Hendey No. 2 Universal.
- 1—Van Norman No. ½.
- 1—Garvin No. 14.

Milling Machines—Slab

- 1—Ingenoll 30x30x10', 3 heads.

Presses

- 2—Toledo Nos. 1 and 92½E.

Saws

- 1—Atkins Power No. 7.
- 1—Peerless 6x6.

Screw Machines—Automatic

- 1—New Britain No. 24 Mult. rpd.
- 4—Gridley ¾" 4-spindle.
- 1—Cleveland 2" S. S.
- 6—National Acme Nos. 51, 53 and 55 Multiple spindle.

Shapers—Crank

- 1—American 16" Hi Duty.
- 2—Steptoe 16".
- 1—Lodge & Davis.

Tappers

- 1—Rickett No. ¾ D Horiz.
- 2—Garvin Vertical.

Welding Outfits

- 1—Thompson Elec. Type 101 Butt.
- 3—Toledo Spot; Federal Spot; Type B Arc.

Miscellaneous

- 1—Crescent Rip and Cross Cut saw table and 5 H. P. motor.
- 1—190 H. P. Synchronous motor.
- 3—Generator Sets.
- 1—Baird No. 2 Coiling & Cutting.

The Indianapolis Machinery & Supply Co., Inc.
1959 S. Meridian St., Indianapolis, Indiana

To Machinery DEALERS and Users

We have a desirable lot of NEW and USED tools, some thoroughly rebuilt and in fine condition, others "As is" but in running order, all of which we wish to move quickly at interesting prices. Write or see us regarding this stock, which is on display in our Cincinnati warehouse. This lot is as follows:

NEW TOOLS

No. 2 Edlund Double Column Upright Drill.
28" Type A Gooley & Edlund, Briggs Type, Milling Machine.
No. 2 Wood Tilted Turret Lathes, friction geared head, (2).

USED TOOLS

LATHES

18"x8' "American," Single Back Gear.
24"x10' "American" Heavy Pattern, Double Back Gear.
16"x8' Hamilton, Single Back Gear.
18" Gisholt Turret, Cone Drive, (2).
2 1/4"x24" Jones & Lamson Flat Turret, Geared Head
3", 2-Spindle Jones & Lamson Flat Turret, Geared Head.
16"x8' Automatic Machine Co. Threading Lathe.

PLANERS

*42"x36"x26' "American" 4 Heads.
*48"x48"x26' "American," 4 Heads.
72"x60"x31' Pond, 4 Heads.

DRILLS—MULTIPLE SPINDLE

No. 2 Bausch High Speed, with eight 2" spindles.

DRILLS—RADIAL

*3' "American" Sensitive.
*4' 4" "American" Sensitive.
4' Bickford, Cone Drive.
*5' Niles-Bement-Pond, round column, semi-universal, S. P. D.
5 1/2' Pond, Cone Drive.
6' Prentice, Cone Drive.
*7' Bickford, Triple Geared, Single Pulley Drive.

SCREW MACHINES

2 1/2" Gridley Single Spindle Automatic, motor driven.
No. 54 National Automatic.

MILLING MACHINE

No. 40 Becker-Brainerd Duplex.

GRINDERS

No. 10 Bryant Semi-Automatic Hole Grinder.
No. 22 Brown & Sharpe Internal Grinder.

GEAR CUTTERS

No. 3 Brown & Sharpe Automatic (for gears up to 26"x8") (3).

SLOTTER

48" Bement Heavy, motor driven (almost new).

VERTICAL BORING MILL

36" Gisholt, motor driven.

MISCELLANEOUS

No. 3-B, J. N. LaPointe Broaching Machine.
(*) Can be motor driven.

The American Tool Works Company

Cincinnati, Ohio, U. S. A.

Builders of Highly Productive Lathes, Radials, Shapers

\$\$ Kinsey's Dollar Savers \$\$

USED MACHINE TOOLS

MILLING MACHINES

- B-2870—Cincinnati No. 4 Plain.
- B-2613—American No. 1½ Plain.
- B-2938—Hendey Plain Lincoln-Type Mfg.
- B-2359—Pratt & Whitney Lincoln Type Plain.
- B-3069—No. 2 Vertical.
- B-3095—Brown & Sharpe No. 2-A Universal.
- B-2688—Brown & Sharpe No. 1 Universal.
- B-2866—Pratt & Whitney No. 2 Hand.
- B-1931—Garvin Plain.
- B-1825—Pratt & Whitney No. 2 Hand.
- B-2766—National No. 0 B. B. Hand.
- B-2109—Barber-Colman Vertical Spindle Circular.
- B-2702—Bickett Vertical Spindle.
- B-2890—Briggs Type A.
- B-1928—Whitney No. 6 Lever.
- B-1823—Pratt & Whitney Thread Milling.
- B-2649—Pratt & Whitney Small Thread Milling.

METAL PLANERS

- B-2334—Cincinnati 60"x60"x14' Spur Geared, two rail heads.
- B-2407—Betts 55"x55"x30' Spur Geared, two rail heads.
- B-2333—Knecht 42"x42"x20' Spur Geared, four heads.
- B-2332—Knecht 36"x36"x12' Spur Geared, four heads.
- B-3064—Gray 36"x36"x12' Spur Geared, one head.
- B-2987—Hendey 32"x32"x10' Spur Geared, two heads.
- B-2428—Gray 30"x8', one rail head.
- B-2939—24"x10' Old Style Spur Geared, one rail head.

Write for new 48 page booklet listing and pricing several hundred items of Lathes, Milling, Grinding, Buffing, Drilling, Punching, Shearing and Miscellaneous Machines.

The E. A. Kinsey Company

331-335 West Fourth St.,

Cincinnati, Ohio

BRANCHES: INDIANAPOLIS, IND. HAMILTON, OHIO DAYTON, OHIO,
LOUISVILLE, KY. COLUMBUS, OHIO

Good Used Machine Tools

BARGAIN PRICES

AUTOMATIC SCREW MCHS.

- 1-3/4" Cleveland Automatic
- 1-8/16" 4 Spindle Gridley.
- 3-1/4-1 1/2" Clevelands
- 2-No. 515 National Acme
- 2-No. 53 National Acme
- 1-No. 5A Potter & Johnston
- 2-No. 6A Potter & Johnston

VERTICAL AND HORIZONTAL BORING MACHINES

- 4-42" Bullards, 2 hds., Motor Dr.
- 1-44" Putnam, 2 heads.
- 1-72" Bickford, vert, 2 heads.
- 1-96" Niles Vert., 2 hds.
- 1-No. 6C Binasee, 3 1/4" bar
- 1-Bement-Miles, 5 1/2" bar
- 1-Landis, 3 1/2" bar, Floor Type
- 1-Niles-Bement Pond, 4 1/2" bar.
- 1-Newton, 5" Bar.

DRILLS

- 1-20" Silver
- 1-3 Spindle W. F. & John Barnes
- 1-4 Spindle Taylor & Fenn.

GRINDERS

- 1-No. 1 Morse
- 1-No. 3 Morse
- 1-10"x36" Norton
- 1-No. 2 Brown & Sharpe Universal
- 1-No. 12 Brown & Sharpe Plain
- 1-No. 4 Brown & Sharpe Universal
- 2-No. 60 Heald
- 1-No. 3 Rivett Internal
- 1-Rivett Radius
- 1-Blevney Production
- 1-No. 14 Gardner
- 1-No. 22 Heald vert. Rotary
- 1-No. 10 Blanchard, Motor Drive.
- 1-Sellers Tool Grinder.

LATHES

- 2-13"x5" Willard
- 4-16"x6" Porter
- 1-16"x6" Oliver. Taper Attach.
- 1-18"x6" Lodge & S. Gd. Head.
- 1-18"x8" Reed Prentice, Gd. Hd.
- 1-24"x12" Bradford
- 1-24"x16" & 30"x26" Flather.
- 1-36"x16" Springfield
- 1-26"x10" LeBlond Univ. Cr. Sh.

MILLING MACHINES

- 1-No. 3 Garvin

- 1-No. 6 Whitney
- 1-No. 0 1/2 LeBlond
- 1-12" Cincinnati
- 1-No. 5 Brown & Sharpe, Plain.
- 1-No. 3 Becker Vertical
- 1-No. 4 Cincinnati Vertical
- 1-No. 4 Becker Vertical
- 1-No. 5 Becker Vertical
- 1-No. 5 Brown & Sharpe Vertical
- 1-No. 6 Becker Vertical
- 1-No. 12 Brown & Sharpe
- 2-12" P & W. Automatics
- 1-Newton Slab Miller (Planer Ty.)
- 1-No. 1 1/2 Garvin Duplex—new

PLANERS & SHAPERS

- 1-14" Flather
- 1-16" Garvin
- 1-36"x8" Pond, Motor Drive
- 1-36"x36"x18" Cincinnati
- 1-60"x60"x20" Putnam
- 1-72"x72"x22" Niles
- 1-84"x56"x16" Gray

PRESSES—POWER

- 1-No. 18 Stiles & Parker.
- 1-No. 4 Bliss, Stiles
- 1-No. 5D Standard
- 1-No. 101 V. & O.
- 1-500 ton Mesta.
- 1-No. 6 Beaudry Hammer

SCREW MACHINES AND TURRET LATHES

- 1-No. 1 Warner & Swasey
- 1-No 3 Foster
- 2-21" Gisholts
- 1-3"x36" Jones & Lamson
- 1-18" Libby
- 1-24" Gisholt

MISCELLANEOUS

- 1-No. 14 Pratt & W. Profiler.
- 1-Leland-Gifford Profiler.
- 1-Newton Cold Saw
- 1-Keller Die Sinker
- 1-Farwell Gear Hobber
- 1-Pratt & Whitney Gun Barrel Drilling Machine
- 6-No. 3 26" B. & S. Gear Cutters
- 1-Nutter & Barnes Cold Saw
- 1-5 Ton Niles Crane, 23' span
- 1-Type 36, Stoll Slitter
- 1-No. 4 Stoeber Pipe Machine.

If the machines you need are not herein listed send us your requirements. We can fulfill your needs.

WIGGLESWORTH MACHINERY CO., 170 Summer St., BOSTON, MASS.

Tools in Excellent Condition at Reasonable Prices

- 1-4' Bickford of Cincinnati Radial Drill, s.p.d. thru gear box with t. a.
- 1-4' Bickford of Cincinnati Full Univ. Radial Drill, s.p.d. thru gear box.
- 1-36" Bullard Boring Mill.
- 1-30" Bullard Boring Mill.
- 1-30x10 Niles Bement & Pond Lathe, motor drive without motor.
- 1-20x6 Reed Prentice geared head, motor drive with A. C. Motor, H. D.
- 1-16x6 Lodge & Shipley Geared Head Lathe.
- 1-14x6 LeBlond, quick change gear Lathe.
- 1-12x6 Hendey, cone pulley drive, Lathe, serial number over 18,000.
- 1-No. 4 Cincinnati Plain Milling Machines, 3 step cone.
- 2-No. 5-B Becker Vertical Millers.
- 1-No. 3 Cincinnati Plain Milling Machine.
- 1-No. 5 Brown & Sharpe Vertical Milling Machine.
- 1-No. 1 Brown & Sharpe Universal Milling Machine.
- 1-No. 1A Milwaukee Milling Machine, s. p. d.
- 1-No. 2 La Pointe Double Spindle Broaching Machine.
- 1-No. 24 New Britain Chucking Machine.
- 10-Four, three, two Spindle Barr Sensitive Drills.
- 1-Gardam 12 Spindle Multiple Drill.
- 1-Gardam 6 Spindle Multiple Drill.
- 2-Two Spindle Leland Gifford High Speed Drills.
- 2-Single Spindle Leland Gifford High Speed Drills.
- 1-Single Spindle Avey High Speed Drill.
- 3-24" Barnes Sliding Head Drill Presses.
- 1-Two Spindle Sipp with power feed, High Speed Drill.
- 1-No. 2 Landis Universal Grinder.
- 1-No. 2 Brown & Sharpe Universal Grinder, very late model, like new.
- 1-No. 70 Heald Grinder.
- 1-6x32 Norton Cylindrical Grinder.
- 1-3x36 Brown & Sharpe Gear Cutter, motor drive.
- 2-No. 16 Whiton Spur and Bevel Gear Cutters.
- 2-No. 6-60" Brown & Sharpe Spur Gear Cutters.
- 1-Landis Bolt Cutter, 1½" capacity.
- 1-4" Little Giant Pipe Machine.
- 1-No. 62 Straight Side back geared V. & O. Power Press.
- 2-No. 4 Toledo Inclinable Power Presses.
- 1-No. 5 Styles Back Geared Power Press.
- 1-No. 30 Bliss Arch Press.
- 1-No. 20 Bliss Press, Inclinable.
- 1-No. 55 Swaine Styles Punch Press, back geared.
- 1-10 KW Thompson Spot Welder.
- 1-Dwight Slate Marking Machine.
- 1-20" Stockbridge Shaper, A. C. Motor.
- 1-18" Barker Shaper.
- 2-15" Potter & Johnston Shapers, A. C. Motor.
- 1-21" Gisholt D. C. Variable Speed Turret Lathe.
- 1-24" Gisholt D. C. Variable Speed Turret Lathe.
- 1-1½" National Bolt Cutter with dies.

Every Machine Is Fully Guaranteed

LARGE ASSORTMENT OF OTHER GOOD USED TOOLS

Broadway Machinery Co., Inc.

211 Centre Street,

New York City

Send Us Your Inquiries

Selling Out at Sacrifice Prices

Entire Stock must be liquidated promptly

LATHES

37 $\frac{1}{2}$ "x14' Johnson d. b. g., q. c. f., t. a.
32"x12' Pittsburgh, heavy duty, q. c. g.
27"x12' Bullard.
26"x11' Wickes, q. c. g.
20"x10' Niles, q. c. g.

19"x10' Draper, patent head,
and many others.
14"x6' Springfield. Tool Room type
taper attachment.

TURRET LATHES

3 $\frac{1}{2}$ x20" Pond, triangular pattern
3x36" Pratt & Whitney, hollow hex.
19"x7' Fay & Scott, back grd.

No. 22 $\frac{1}{2}$ Garvin.
1 $\frac{1}{2}$ x9" Cincinnati-Acme, wire feed.
No. 2 Smurr & Kamen, wire fd., (5).

DRILL PRESSES

48" Almond, sens. radial, post type.
40" Barnes horizontal radial.

28" Aurora, sliding head.
24" Foote-Burt heavy duty.

MILLING MACHINES

No. 3 Brown & Sharpe, plain, cone
type.
No. 3 Becker-Brainard, new model,
q. c. g.

No. 1 Van Norman hand miller.
No. 3 Becker universal, b. g. with
vertical attachment.

PLANERS

48"x37"x9' Sellers, 2 heads.
48"x48"x12' Gray, 2 heads.

30"x30"x8' American, 1 head.

BORING MILLS

Boring mill, No. 1 Sellers hor., 2 $\frac{1}{2}$ " bar.
Boring mill, car wheel, 60" Niles.
Boring Machine, special Journal
Bearing boring type, 26"x8'
Johnson, (2).

Boring, drilling and milling ma-
chine, Bement-Miles horiz., 4 $\frac{1}{2}$ "
bar, 14' 6" bet. heads, with revol-
ving table.

MISCELLANEOUS

Arbor press, No. 3 Greenerd.
Arbor press, No. 8 Greenerd, 36"
bet. columns.
Arbor press, 20 ton Weaver.
Electric hoists, 1-ton cap. (5).
Gear shaper, No. 35 Fellows, straight
and helical heads.
Generator, No. 100 Oxfeld acetyl.
Grinder, disc, No. 17 Bealy.
Grinders, double end electric.
Hammers, 15, 25 & 40 lbs. Bradley
helve.
Hammers, 50 lb. Little Giant.
Hammers, 60 lb. Bellefonte upright, 2.
Molding machines Tabor (9).
Pipe machines, 4" & 8" Eaton, Cole
& Burnham.

Punch presses, all sizes, (15).
Presses, Waterbury-Farrel d. a., 2 $\frac{1}{2}$ "-
5" strokes, 28" bet. housings, auto.
roller feed, with cut-off attach.,
wt. 26000 lbs., new, (3).
Punch or gate shears, 72" Cleveland
multiple, 15" throat.
Riveter, air, 6' gap Allen, cap. 1 $\frac{1}{2}$ ".
Riveter, air, 6' gap. Allen, cap. 6".
Saw, No. 6 Nutter & Barnes (2).
Saw and column facer, Q. M. & S.
No. 4-B universal, 31" blade.
Shear, 8' Ohl, No. 20 ga.
Slotter, 14" Niles.
Tire press, hyd., 60-ton Defiance.
Tooth rounding machine, S. & S.
Woodworking machines (5).

SEND FOR COMPLETE CATALOG

HERMAN L. WINTERER

943-53 N. FRONT ST.,

PHILADELPHIA, PA.

NEW 3 PHASE MOTORS CHEAP—FROM ½ H. P. UP

LATHES

- | | |
|---------------------------------------|---------------------------------------|
| 12"x 8' Cleveland, geared head. | 16"x 8' Hamilton, quick change. |
| 14"x 6' Carroll-Jamieson, new, q. c. | 18"x10' American, quick change. |
| 14"x 6' Hamilton, grd. hd., motor dr. | 20"x10' Hamilton, rapid production. |
| 14"x 6' Monarch, quick change. | 24"x12' LeBlond. |
| 14"x 6' Sebastian, grd. hd., m. d. | 24"x24' Prentice, with raising block. |
| 14"x6' Worcester. | 36"x60' & 36"x60' Fitchburg, Lo-Swing |
| 14"x 8' Sidney, double back geared. | South Bend, new, all sizes. |

TURRET LATHES and SCREW MACHINES

- | | |
|---------------------------------|-------------------------------------|
| No. 52 National Acme automatic. | 14" capacity Smurr & Kamen. |
| No. 53 National Acme automatic. | 14" Milholland. |
| No. 54 National Acme automatic. | 2x24 and 3x36 J. & L. |
| No. 4 Deafance, 14" capacity. | No. 1 Foster, 13/16" capacity, (2). |
| 1" Acme. | 1" Pratt & Whitney. |

SHAPERS

- | | |
|---------------------------------------|-----------------------------------|
| 14" Niles, traveling head. | 16" Lodge & Davis, crank. |
| 16" Barker. | 24" Rockford, back geared, crank. |
| 16" O. & S., b. grd., new, low price. | 24" O. & S. back geared crank. |

PRESSES

- | | |
|--|------------------------|
| No. 10 and No. 15 Excelsior, foot. | No. 4 Federal o. b. i. |
| Nos. 2-A & 5-A Willard inclinable. | No. 5 Federal o. b. i. |
| Nos. 1, 1 1/2, 2, 2 1/2 Robinson, new. | Emco bench. |

DRILLS and RADIALS

- | | |
|--|--------------------------------|
| No. 1 Baush multiple. | 32" Hoefel, sliding head. |
| Baush 5' radial. | 6" Ceiling drill. |
| Hilbert 3' radial. | 25" Kokomo high speed. |
| 22" 24", 26", 28" and 32", sliding hd. | 44" Stover. |
| 24" Bickford, tapping attachment. | Hole Hog, No. 66-D, 7-spindle. |

MILLING MACHINES

- | | |
|-----------------------------|-------------------------------------|
| No. 1 1/2 American plain. | No. 25 Becker plain, power feed. |
| No. 2 Kempsmith plain. | No. 2 H Brown & Sharpe plain. |
| No. 3 Kempsmith plain, new. | Ingersoll 24" x 20" x 8" horizontal |
| No. 4 LeBlond plain. | motor drive. |
| No. 25 Bilton. | |

GRINDERS

- | | |
|-------------------------------|---------------------------------|
| Nos. 1 & 78 W. & M. surface. | No. 60 Heald cylinder. |
| 6"x15" Fitchburg plain. | Schmitt cylinder grinder. |
| 12"x36" Cincinnati universal. | J B X, W. & M. tool and cutter. |
| 16"x42" Landis universal. | No. 10 Besly 18" double disc. |
| 36" and 66" Yates plate. | No. 20 Bryant, chucking. |

MISCELLANEOUS

- | | |
|--------------------------------------|--|
| Band saw, Clark, compound. | Planer, 24"x24"x6'. |
| Band saw, Napier 10"x10'. | Planer, 36"x36"x14' Gray, 2 heads. |
| Blower, No. 6 Piqua, pressure. | Planer, 42"x42"x12' Gray, 2 heads. |
| Blower, positive pressure, Leiman | Planer, 48"x48"x16' Cincinnati, 4 hd. |
| Boring mill, Colburn No. 3, tur. hd. | Punch & shear, 1/2"x10" throat. |
| Brake 10', Keene, 18 ga. | Riveting hammers, Nos. 1, 2, 3, 4-A |
| Brake, 12' Chicago Steel 18 gauge. | High Speed. |
| Broaching mchs., 1 and 3 LaPointe. | Sand blast, Boland. |
| Compressors, 6x8, 8x8 and 9x8. | Scale, 1500 lb. Toledo, dial type. |
| Gear cutter, No. 3—26 B. & S. | Shear, 60" Peck, Stow & W., 18 ga. |
| Gear cutter, No. 13 Brown & Sharpe. | Shear, No. 362 Robinson. |
| Gear miller, Bilton No. 1. | Shear, No. 562 Niagara. |
| Hammer, 150 lb. Standard drop. | Shear, circular, Pettingell, 60" thrt. |
| Pipe machines, 2", 4" & 6". | Threading mche., W. & P. 2-spindle. |
| Planer, 36"x36" Gray, heavy duty. | Washing machine, Blakeslee. |

OSBORNE & SEXTON
MACHINERY **COMPANY**
 COLUMBUS Dept. H. OHIO

A Few Specials

DRILLS

1-3-spindle Sipp H. S. B. B. Drill, 7" overhang.....	\$ 550.
1-2-spindle Henry & W. H. S. B. B. Drill 6" overhang.....	250.
1-Single-spindle Leland & Gifford, 6" overhang.....	125.
1-21" Kokomo sliding head Drill, tapping attachment.....	250.
1-21" Cincinnati Bickford sliding head, tapping att..	350.
1-21" Cincinnati Bickford sliding head Drill, tap. att..	325.
1-No. 11 Natco multiple Drill, equipped with 4-spdl.	385.
1-Valley City multiple Drill, equipped with 6-spdl.	425.

LATHES

1-16x6 Monarch screw cutting Lathe, quick chg. gears.....	350.
2-14x6 Monarch screw cutting Lathes, q. c. g., each.....	325.
2-17x8 Sidney screw cutting Lathes, q. c. g., each.....	450.
2-17" LeBlond automobile Lathes, arranged for motor drive, each	1000.

MILLS

1-28" Cincinnati Semi-automatic Mill.....	375.
2-Ohio Tilted Table Mills, arranged for mtr. dr., each.....	250.
1-24" Bullard, New Era Type.....	3000.
1-Hall Planetary Thread Mill.....	1750.
1-Taylor & Fenn Vertical Mill.....	750.
1-Universal horizontal Boring Mill 2½" bar.....	2750.

MISCELLANEOUS

1-2X Garvin Automatic Tapping Machine.....	255.
2-Gisholt Tool Grinders, each.....	125.
1-2½ Bath Universal Grinder.....	475.
2-Rickert-Shafer horizontal Threaders, each.....	965.
1-2" Model C Cleveland Automatic 33,000 Serial, Arranged motor drive.....	875.
1-5-A Lees Bradner Gear Hobber.....	975.
1-No. 34 New Britain with tapping spindle, arranged for motor drive.....	1200.
1-No. 24 New Britain arranged for motor drive....	750.
1-10x18 Norton Plunge Cut Grinder—Almost new.....	1850.

PALMER-EDWARDS CO.

906 Leith St.,

FLINT, MICH.

Our Pride—Your Pride GOOD TOOLS

- No. 3 Cincinnati Vertical Miller, with Rotary Table single pulley drive. Price....\$1100.
- No. 2½ Rockford Plain Miller, 60" power longitudinal table feed. Length of table 6' 6" cone drive. Complete with Vertical head and dividing head. Price.....\$1200.
- No. 33 Abrasive Surface Grinder, complete with Magnetic Chuck and wet grinding attachment. 95% NEW. Price.....\$1000.
- No. 25 Foote Burt 24" High Duty Drill Press, capacity 3" in steel. Single pulley drive. Price\$600.
- 14"x6' Hamilton Engine Lathe, cone drive, qk. change gear, latest design. Price ---\$500.
- No. 4 Millholland Turret Lathe, friction geared hd., power fd. to turret. Compl. Price \$625.

— ALSO READ BELOW —

- 3—14"x6' Hamilton Engine Lathes, quick change gear, D. C. Motor Drive. In excellent guaranteed condition. Special Price.....each\$375.
- 20—4000 lb. Cap. Y. & T. Triplex Chain Hoists, ea. 45.
- 10—8000 lb. Cap. Y. & T. Triplex Chain Hoists, ea. 70.

SEND US YOUR INQUIRIES

CENTRAL STATES MACHINERY CO.

134 South Clinton St.,

CHICAGO

GUARANTEED TOOLS

AUTOMATICS

14" Bullard Multi-Au-Matic.
1", 14" and 24" Gridley 4-spindle.
1" and 18" New Britain.
5A and 6A Potter & Johnston.
14" Fay. Flanders type.
53, 55 and 56 National Acme.

BROACHES

2—No. 4 OILGEAR hydraulic.
2—No. 3 American Rack type.
No. 4 LaPointe Hudson.
No. 3B J. N. LaPointe.

DRILLS—Radial

3' American.
34' Morris.
4' Hammond.
5', 6' and 8' Western.
6' Niles-Bement-Pond Universal.

DRILLS—Multiple

8-spindle Baush No. 1.
12-spindle Harrington.
No. 13 Pratt & Whitney.
26-spindle Baush No. 3.
26-spindle No. 31D Fox.
34-spindle No. 30 Natco.

GEAR CUTTERS

12" Gould & Eberhardt Hobbers.
No. 12 Barber Colman.
16" Cincinnati Hobber.
No. 5A Lees-Bradner.
18" Gould & Eberhardt Hobbar.
24"—36" Gould & E. Hobber.

GRINDERS

6"x18" Landis.
6"x32" Norton.
8"x18" Modern.
10"x24" Landis.
10"x36" Norton.
10"x52" Landis.
12"x36" Cincinnati.
12"x72" Landis.

LATHES

14"x 6" Hendey, Tapping Attach.
16"x 7" South Bend.
18"x 8" Bradford.
20"x 8" LeBlond.
20"x104" Cisco.
24"x 12" Bradford.
27"x 12" Boye & Emmes.
32"x 14" Schumacher Boye.
36"x 16" Johnson.
36"x 18" Schumacher Boye.
48"x 20" New Haven.
52"x 16" Pittsburgh.

LATHES—Turret

1" Millholland, bar feed.
No. 2 Foster.
No. 4 Warner & Swasey.

2" No. 7 Bardons & O., bar feed.
2", No. 6 Warner & Swasey.
21" and 24" Gisholt.
34"x36" Cincinnati Acme.
Jones & Lamson 2-spindle.

MILLERS

No. 4 Cincinnati single pulley dr.
No. 3 Kempsmith.
No. 3 Brown & Sharpe.
No. 2B Heavy Brown & Sharpe.
No. 2 Cincinnati.
No. 14 Rockford.
No. 14 Brown & Sharpe.
No. 14A Milwaukee.

MILLERS—Production

24" Cincinnati Duplex.
12" Cincinnati Plain Mfg.
40" Ohio Tilted Rotary.
26"x24"x6" Ingersoll.
30" Ingersoll Rotary Table.
34" and 42" Briggs Type B.

PLANERS

30"x30"x 8" Cleveland openside.
30"x30"x12" Cleveland openside.
36"x36"x12" Cincinnati.
42"x36"x16" Cleveland openside.
48"x48"x10" Liberty.
72"x72"x16" Pond.

PRESSES

No. 4 Massillon geared.
Nos. 64 and 65 Consolidated.
No. 24 V. & O. O. B. I.
No. 3 Baird Openback.
No. 21 Bliss.
No. 41 Toledo with table.

SAWS

6"x6" Peerless Shaping.
6"x6" Racine.
No. 1 Klemm Metal Band.
36" Crescent Wood Band.

SHAPERS

15" Steptoe.
16" Springfield.
20" Hendey.
20" Steptoe.
24" Gould & Eberhardt.
24" Kelly.
25" Springfield.
28" Columbia.
30" Walcott.
36" Morton Draw Cut.

THREADERS

14", 2", 4" and 3" Acme.
2" Landis 2-spindle.
2" Acme 2-spindle.
1" Foote Burt 2-spindle.
1" National.
1" Geometric.
1" Webster & Perks 2-spindle.
1" Rethreader.

Miles Machinery Co., SAGINAW, W.S. MICH.

All In Chicago Stock

TURRET LATHES

No. 4 Warner & Swasey Universal Turret Lathes, with and without screw chasing attachment,
24" Steidle Turret Lathe.

Cleveland automatics, 8" and 10".
14"x9" Acme, P. F.
No. 4 Bardons & Oliver, P. F. with and without pan.

BORING MILLS

No. 21 Lucas Horizontal Boring Mill, 2 1/2" bar, single pulley drive.

44" Putnam vertical 2 heads, m. d.
30" Colburn turret head.

MILLING MACHINES

No. 2-B Kearney & Trecker, plain.
No. 2-B Kearney & Trecker, vert. U. S. Hand miller.
No. 3 Kempsmith plain, cone head.
No. 1 Kempsmith plain, cone head.
No. 14 Brown & Sharpe plain cone head.
No. 3 B. & S. grd. hd., a. c., m. d.

No. 2 B. & S. plain cone head, vertical attachment.
No. 28 Ohio plain, cone head.
No. 33 Kempsmith Prod. miller.
No. 3 Cincinnati plain Hi Power
Gooley & Edlund Lincoln type.
No. 1 Kempsmith univ. cone head.
18" Cincinnati automatic.

LATHES

12"x8" Hendey, q. c., taper att.
14"x6" American, q. c.
14"x6" Rockford, q. c., (new).
14"x6" Flather, q. c.
16"x8" South Bend, plain chuck.
16"x8" Monarch, quick change.
16"x8" Rockford, q. c., (new).

16"x8" Cincinnati, q. c.
18"x8" Sebastian a. c., m. d.
18"x8" Boye & Emmes, q. c.
18"x8" Lodge & Shipley, quick chg.
20"x8" American Heavy Duty, q. c.
21"x8" LeBlond Heavy Duty.
20"x10" American quick change.

SENSITIVE DRILLING MACHINES

New and Used 1, 2, 3 & 4 spindles
Allen b. b. drills.

3-spindle Avey ball bearing.
4-spindle Avey ball bearing.

UPRIGHT RADIALS AND MULTIPLE DRILLS

20" Barnes all geared.
24" Barnes all geared No. 246 drill and taper.
20" Excelsior, b. g.

24" Superior stationary head.
25" Barnes, stationary head.
No. 13 Pratt & Whitney, 16-sp.

SHAPERS

16" Rockford, cone.
20" Columbia, single pulley, (new).
20" Gould & Eberhardt, cone.

24" Columbia, single pulley (new).
24" Gould & Eberhardt cone.
25" Smith & Mills cone.

GRINDERS

No. 2 Oakley Universal Tool & Cut.
Gisholt tool grinder.

Diamond Tool & Surface Grinder.
10"x36" Thompson Univ. T. & C.

MISCELLANEOUS

1 1/2" Landis 2-sp. Bolt Cutter
1" Landis Bolt Cutter.
8" Landis pipe machine.
4" Oster, (new).
6x6 Hack Saws.
No. 3 Reynolds Screw Driver.

No. 12 Barber-Colman Gear Hob.
No. 6-36" Fellows Gear Generator.
New Federal Presses, all sizes.
68N Bliss Double Action.
Geared Reducing Press, 9" stroke.

USED MACHINERY DEPT.

Manning, Maxwell & Moore, Inc.
27 N. Jefferson St., Chicago, Ill.

84"x60"x30' Planer 4 heads.
72"x72"x24' Niles Planer.
60"x60"x20' Gray Planer, 3 heads.
48"x48"x14' Pond Planer, 2 heads.
26"x26"x 6' Niles Planer, 1 head.

25" Niles-Bement-Pond Lathe.
22"x10' Davis Lathe.
20" Whitcomb Lathe, Q. C., Geared Head.
18"x10' Sidney Lathe, Quick Change.
14"x 8' Sidney Lathe, Quick Change.

24" Cincinnati B. G. Shaper.
16" Steptoe Shaper.

No. 3 Hendey Milling Machine.
No. 3 Cincinnati Universal.
No. 5 Hendey Lincoln Mfg. Type.
No. 5 Brown & Sharpe Vertical.

4' Arm Carlton Radial Drill.
3' Arm Carlton Speedy-Sensitive.
2½' Arm Carlton Radial Drill.
Drill Presses—14 to 28".

8' Betts Boring Mill.
Horizontal Boring Mills 2½ to 5" bar

26/48"x14' McCabe "2-in-1" Lathe.
26/48"x16' McCabe "2-in-1" Lathe.
36"x12' Geared Head Quick Change Lathe.
50"x24' Bement-Miles Lathe.
40"x16' Geared Head Quick Change Lathe.

10' Bending Rolls.
100 Ton Wheel Press.

J. J. McCabe Lathe & Mchy. Corp.
149 Broadway, New York City

Attractive Prices To Move Stock

- BORING MILLS:**----- Betts Horizontal Table Type Mill, 4 $\frac{7}{8}$ " bar.
D. & H. Horizontal Floor Borer 5" bar.
Gisholt 72" Vert., M. D.
Betts 7/10" Vertical.
- DRILLS:**----- No. 124 Buffalo Post.
14" Rockford, 24" Foote-Burt.
6" Bickford; 5" Prentice; 10" Bausch Radials.
2" Fowdick, 3" Bickford, t. a.
Natco No. 10 C-12 Spindle, No. 1 M. T.
Moline 10-spindle, No. 5 Morse taper.
Bausch Multiple Drill, 12-spindle.
12"x6" Barnes.
- LATHES:**----- 14"x6" Hendey, t. a.
24"x12" Rockford, taper att.
26"x16" Prentice, taper attachment,
36"x18" Porter.
63 $\frac{1}{2}$ "x36" 6" Centers Niles H. D.
60"x38" Bement-Miles.
- MILLING MCHES.:**----- Ingersoll Fixed Rail, 24"x21"x20" table.
Ingersoll Slab 30"x30"x12", m. d.
No. 4 Brown & Sharpe Universal.
Standard No. 4 $\frac{1}{2}$.
B. & S. No. 00 Hand.
- PUNCH & SHEAR:**----- Canedy-Otto, hand power, 1 $\frac{1}{2}$ "x1 $\frac{1}{2}$ ".
No. 6 Long & Allstatter S. E.
Rorysford No. 3, 16" throat 1"x1".
Wain & Roos 15" throat, 3 $\frac{1}{4}$ "x1 $\frac{1}{2}$ ".
Mamillon 22" throat, 1"x1" arch. jaw.
Cleveland "EF", 36" throat 1 $\frac{1}{4}$ "x1".
Cleveland E. F. 48" throat 1 $\frac{1}{4}$ "x1".
Industrial Double End, 7 $\frac{1}{2}$ "x7 $\frac{1}{2}$ ".
No. 2 Hilles & Jones hor. punch, 8" throat.
Marshalltown No. 10-P Throatless.
Lennox Throatless Shear, 3 $\frac{1}{4}$ " capacity.
- GRINDERS:**----- Landis No. 5 Cylinder.
Cincinnati 10"x48" Grinder.
Norton Universal Cylinder Extension 10"x50".
- SHAPERS:**----- 14" 20", 24" Gould & Eberhardt, b. g.
- MISCELLANEOUS:**----- Boiler, 100 H. P. Horizontal Tub.
Brake, Chicago Hand, 72"x1/16".
Crane, No. 4 Canton Floor.
Hammer, 250 lb. Little Giant m. d.
Motors, 5 and 7 $\frac{1}{2}$ H. P.—3-60-220.
Planers, Cincinnati 48"x44"x12".
Planer, 48"x48"x21" Gray, 3 heads.
Planer, 48"x48"x16" D. & H. Openside.
Planer, 72"x54"x12" Niles-Bement-Pond.
Presses, No. 0 Consolidated, O. B. I.
Presses, No. 1—No. 3 V. & O.—O. B. I.
Presses, Nos. 18 and 19 Bliss, Perkins.
Press, 50 ton Lourie Hydraulic.
Presses, Arbor, No. 3 $\frac{1}{2}$ Greenerd; No. 1 Atlas.
Saws, Hunter 24" hi-speed, m. d.; 18" Higley Cold.
Screw Machines, Cone Automatic 7 $\frac{1}{2}$ ", M. D.
Screw Mchs., 2 $\frac{1}{4}$ "x11" Acme; Meriden, 6 hole turret.
Surface Plate, 44 $\frac{1}{2}$ "x6' 6", 6 $\frac{1}{2}$ " thick.

RUSSELL MACHINE COMPANY
1447 Oliver Building, PITTSBURGH, PA.

For Radio Manufacturers Ball Bearing Drills

7" overhang Henry & Wright single spindle.
15" overhang Henry & Wright single spindle.
8" overhang Sipp, single spindle.
10" overhang Kokomo, No. 3 taper, very heavy.
Two spindle Allen, No. 2 taper (two).
Three spindle Henry & Wright.
Three spindle Allen, No. 2 taper.
Four spindle Leland-Gifford, with pump and tank.
All Rebuilt and in first class condition.

Other Machines

42" Western Plain Radial Drill, single pulley drive, box table.
Two 6"x32" Norton Plain Grinders, serials 9200.
No. 70 Heald Internal Grinder, 2100 serial.
4½" Cleveland Model A Automatic Screw Mche.
½", ¾", 1¼", 2" Model A Clevelands, fine cond.
1¼" Gridley Multiple Automatic, serial 8167.
Two No. 6 Foster Hand Screw Machines.
2X Garvin Automatic Tapper.
5/8" Garvin and Pratt & Whitney Screw Machines.
3—26" W. F. & J. Barnes back geared Drills, one with tapping attachment.
15" Dill Slotter, rotary table, like new.

Our new illustrated stock list ready.

Write for a copy.

A. D. White Machinery Co.
108 N. Jefferson St., Chicago, Ill.

Rebuilt Tools with a **MOREY Guarantee**

BORING MILLS

- 2-Bullard 24" N.E., 36" R.P. s. h.
- 2-Gisholt 52", 60", 2 heads.
- 1-Sellers 72" vertical, 2 heads.
- 1-Pond 10-24" vertical.
- 1-N-B-P 10-16" vertical, 2 heads.
- 1-Betts 12" vertical, 2 heads.
- 1-Niles 14" vertical.
- 1-Niles 16-24" extension vertical.
- 1-Cleveland 24" bar, horizontal.
- 1-Pawling & Harnischfeger 34" bar
- 1-N-B-P. 44" bar, duplex contr.
- 1-Rockford No. 2 vertical.

DRILLS—Multiple Spindle

- 16-Baush Nos. 1, 2, 3 and 4.
- 3-Fox D-31.
- 1-Moline No. 5-D cylinder borer.
- 3-Natco Nos. 11, 12.

DRILLS—Upright

- 2-Allen 2-spindle: 1—Avey 2-sp.
- 2-Barnes 20" and 24" camel.
- 5-Detroit 5-spindle.
- 1-Foote-Burte 4-spindle.
- 6-Henry & Wright 2, 4, 6-spindle.
- 2-Leland & Gifford 2-spindle.
- 2-Pratt & Whitney No. 2 gun.
- 1-New Turner No. 3 vertical.

DRILLS—Radial

- 1-Baush 6'.
- 2-Dresses 5', 6' plain.
- 1-American 6' triple purpose.
- 1-N-B-P. 96" plain.

GEAR CUTTERS

- 7-B. & S. 3x36, 3x36, 4x36.
- 3-B. & S. No. 6, 60" cap.
- 1-Brown & Sharpe No. 13.
- 6-Cincinnati 16" Hobbers.
- 3-Fellows Gear Grinders.
- 6-Fellows Nos. 6, 61, 65, 615.
- 3-Gleason 6", 11", 18".
- 1-G. & E. No. 18-H.
- 1-Gould & Eberhardt 36".

GRINDERS

- 4-Cincinnati No. 2, 12x36, plain.
- 9-Landis 6x18, 10x24, 10x36, 12x36, 12x96 plain.
- 6-Norton 3x18, 6x32, 10x24, 10x36, 10x50, 16x26 plain.
- 1-Norton 16x50 crank.
- 2-Landis 10x52 cam.
- 2-Diamond Nos. 2 and 3 surface.
- 1-Springfield Brandes vert.
- 12-Heald Nos. 65, 60, 70, 75, 80.
- 1-Bath Spline.
- 1-G. & L. No. 12 Teromatic.

PLANERS

- 2-Putnam 26x26x9', 2 heads.
- 1-Detrick & H. 30"x10', 1 hd., o. s.
- 1-D. & H. 48"x96"x20' o. s.

HAMMERS

- 1-New Bradley 30 lb. helve.
- 1-Chambersburg 400 lb. bd. drop.
- 1-B. & S. 800 lb. drop.
- 1-Toledo 1500 lb. bd. drop.

MILLING MACHINES

- 5-B. & S. Nos. 2, 2B, 3, 4, plain.
- 9-Cincinnati Nos. 2, 3, 3-S, 4, 5 pl.
- 2-Garvin No. 134 plain.
- 8-Briggs type "A" mfg.
- 1-Ingersoll 24"x24"x10' plan. type.
- 1-Cincinnati No. 4, s. p. d. vert.
- 1-Cincinnati No. 2 vert., cone dr.
- 1-Taylor & Fenn vertical.
- 13-Becker Nos. 3H, 4B, AB, 5C, 6, C1, vertical.
- 1-Hendey No. 2-G universal.
- 3-Garvin No. 14, 3-A universal.
- 1-Cincinnati 18" duplex.
- 7-P. & W. 42x12, 6x14, 6x48, 6x80 th.
- 3-P. & W. 5", 8", 10" auto.

LATHES

- 1-Hendey 14"x6' geared head.
- 2-Sebastian 18"x5'.
- 8-Lodge & Shipley 18"x9' selective geared head.
- 1-LeBlond 23"x10'; s. p. d.
- 1-Reed Prentice 24"x16'; s. p. d.
- 1-Boye & Emmes 24"x12', taper.
- 1-American 24"x30'.
- 1-LeBlond 25"x16'; cone drive.
- 3-LeBlond 26"x10' univ. crank.
- 1-Reed Prentice 27"x12' s. p. d.
- 1-Johnson 30"x12', m. d.
- 1-Niles-Bement-Pond 42"x24'.
- 7-LeBlond No. 12 multicuts.

Lathes of all sizes and types.

SCREW MACHINES—Automatic

- 14-Cleveland 1", 2", 4", 4 1/2", "A".
- 4-Cleveland 1", 2", 3", 1 1/2" "B".
- 17-Gridley 1", 2", 1 1/2", 1 3/4", 2", 2 1/2", 4-spindle.
- 11-Gridley 3 1/2", 4 1/2", 2 1/2" single spdl.
- 1-Brown & Sharpe No. 0 auto.
- 4-Brown & Sharpe No. 2-G auto.
- 6-New Britain Nos. 23, 24, 33.
- 3-Nat'l Acme Nos. 52, 56, 515.
- 11-P. & J. No. 5-A, No. 6-A.

TURRET AND SCREW MCHS.

- 1-Acme Fox Monitor.
- 6-Foster Nos. 2, 4, 6.
- 4-Greenlee 2x26.
- 10-J. & L. 24x24, 3x36.
- 1-Milholland No. 4.
- 3-W. & S. No. 4 universal.
- 1-W. & S. No. 3-A bar and chk.
- 2-W. & S. No. 2-A.
- 1-Steinle 24" Turret.

This represents but a portion of our stock. Send us your inquiries—we have just made an attractive purchase.

MOREY AND CO., INC. 408 Broome St., NEW YORK, N. Y.

Tool Room Equipment

Accurate and Guaranteed

Every Tool Listed A Good Buy

LATHES

32"x10' B. & E., q.c.hvy. duty \$1200.	14"x6' Hendey q.c., t.a., collets. \$ 700.
20"x10' Monarch q. c. d. b. g. 750.	14"x6' Mulliner, q. c. tap. att. 575.
18"x8' Hendey q. c. yoke head 850.	14"x6' Flather, q.c. heavy, (2). 450.
18"x8' Gidding & Lewis q. c. 525.	12"x5' Hendey, q. c. yoke head 475.
16"x10' LeBlond q. c. 475.	12"x8' South Bend l. c. g. 150.
16"x6' LeBlond Pro Lathes(2) 250.	11½"x6' Sidney q. c., (new) 350.
16"x6' Cincinnati, q. c. collets. 500.	9"x12' Sundstrand grd. hd. (2) 200.
16"x6' Bradford, q. c. tap. att. 550.	8" grd. hd., motor dr. Lathe. 125.
16"x6' South Bend, tap. att. 225.	8" South Bend Bench Lathe. 90.

SHAPERS

7" Rhodes, with extra vertical slotting hd. and rotary tbl. \$ 310.	16" American Crank Shaper. \$ 475.
12" Walcott Crank Shaper. 150.	16" Cincinnati, single p. d. 550.
16" Smith & Mills Crk. Shaper 225.	16" Hamilton Crank Shaper 475.
17" Smith & Mills Crk. Shaper 350.	16" Gould & Eberhardt hf. duty 650.
24" American Crank Shaper. 875.	16" Gould & Eberhardt 675.

DRILL PRESSES

28" Cincinnati, sliding head. \$ 275.	4-sp. Kokomo Hi-Speed b. b. \$ 600.
26" Superior, sliding head. 250.	4-spindle Kern ball bearing. 450.
26" Prentice, slld hd., tap. att. vise table, single pulley dr. 375.	6-spindle Kern ball bearing. 625.
22" Snyder sliding head. 150.	4' Carlton Radial 850.
14" Canedy Otto sliding head, motor driven, Timken Bearings (new) 125.	20" Barnes, Plain (3), each. 55.

GRINDERS

6"x32" Norton Plain Grinders. \$ 350.	No. 2 Oesterlein Cut. Grinder. \$ 250.
12"x36" Landis Univ. Grinder 625.	No. 6 Gardner Disc Grinder. 200.
5"x14" Greenfield Pl. Grinder 275.	24" Ransom 5 h.p., m.d. Grind. 160.

MILLING MACHINES

No. 3 LeBlond Plain, d. b. g. \$ 525.	No. 12 B. & S. Prod., (2) ea. \$ 250.
No. 1½ B. & S. Universal. 550.	No. 1½ Oesterlein Plain. 275.
No. 1½ American Plain. 400.	No. 6 LeBlond, p. f. 175.

MISCELLANEOUS

Gisholt Tub Grinder. \$ 100.	Robbins 2" m. d. Pipe Mche. \$ 200.
Hendey T. R. Bench Planer. 200.	1" Acme Stud Threader. 400.
¾" Pneumatic Tappers, (2) ea. 165.	No. 2 Inclinable Punch Press 150.
No. 4 Foster Scr. Mch., Compl. 400.	No. 6 Fellows Gear Shaper. 250.
¾" Shuster Riveter & Spinner. 110.	5½" Cap Newton Cold Saw. 225.
12x12" Racine m. d. Hack Saw 300.	No. 3 LaPointe Dbl. Broach. 200.
Dwight Slate Mark. Mch. (2). 75.	No. 3 Lees-B. Thread Miller. 325.
No. 1 Baker 1½" cap. Keyseater 275.	No. 10P Marshall's Thr Shear 200.
No. 3 B. & S. 36" Gear Cutter 275.	2½" Acme Tur. Lathe, Compl. 325.

The Toledo Mchy. Exch. Co.
 18 North St. Clair St., Toledo, Ohio

Bolt Cutters, 1" Wells; 2", Acme, 2", Landis, dbl. hd.	Keyseaters... No. 0 Mitts & Merrill.
Bolt Threader, 2 Sp. Namco, 1/8" to 1/2" cap.	No. 3-A Mitts & Merrill.
Boring Mills, 24" Bullard, prod. type.	Lathes..... 14"x8" American, M. D.
42" Gisholt Vertical.	18"x8" Bradford.
42" Bullard New Era.	24"x12" L. & S., Crank.
96" Niles vert., 2 hds.	Millers..... No. 2 Kempnith univ.
Boring Bar, No. 0 D. & H., 3 3/8" bar.	No. 3 Cincinnati univ.
Drills..... D-66 Moline, 4 sp.	No. 2 Cincinnati, Plain.
"Hole Hog.	No. 5-B Becker vertical.
No. 30 Natco, 48 sp.	Pipe Mche... 6" Landis.
No. 41 Natco.	Planers..... 16" Niles plate.
34" Barnes sliding head.	30"x30"x8" Gray.
Radial, 3" Marsch Sens.	36"x48"x10" Cleveland.
Radial, 3" Cinti-Bick.	Presses..... Bliss N-I-Dbl. Act. Cam.
Radial 5" Cin.-Bick. Univ.	No. 21-B Bliss, O. B. I.
Radial, 6" American.	Geared.
Grinders..... No. 1 W. & M., Univ.	Nos. 3 & 4 American
No. 16 B. & S. 10x72 Pl.	Can, O. B. I.
10"x50" Norton.	Saw..... No. 12-B Higley Cold.
84" Diamond Face M.D.	Screw Mches., Nos. 5 and 6 Wood
Hobbers..... Barber-C. Nos. 3 & 12.	Tilted.
	No. 7 Foster, friction head.
	Shapers..... 24" G. & E., back geared.
	Shear..... 42" Niagara 16 ga., 15" gap.

Also Large Unlisted Stock

THE E. L. ESSLEY · MACHINERY · CO

551 W. Washington Blvd., Chicago.

78-80 W. Water St., Milwaukee

Boring Mills,.....	Gisholt 36" Vertical.
	Barrett No. 2 Hor. Bor. & Facing.
	Fosdick Horizontal Boring, Milling and Drilling.
Millers,.....	Pratt & Whitney No. 12 Lincoln Type.
Screw Machines,...	Brown & S. No. 0 Automatic.
	Millholland No. 3 Geared Head.
Squaring Shear, ..	Stow No. 296 Power, 97"x14 gauge.
Straightening Roll,	Bertsch No. 7 1/2, cap. 50"x3/8" plate.

Send for complete list

Warehouse Dayton, Ohio

The Seifreat-Elstad Machinery Co.

CINCINNATI

DAYTON

COLUMBUS

High Grade Machine Tools

Lathes

- 36"x18" Fifeled Engine Lathe.
- 27"x20" Lodge & S., 3 S. C. Q. C.
- 26"x18" Walcott, 3S. C. D. B. G.
- 22"x18" American Geared Head,
S. P. D. Q. C.
- 27"x12" Sidney H.D. 3 S.C. B.B.G.
- 21"x10" LeBlond, H. D. Grd. Hd.
- 15"x10" Whitcomb-B. Q. C. 3 S. C.
- 18"x 8" Lodge & S. G. H. S. P. D.
- 18"x8" Lodge & Shipley, cone dr. Q.C.
- 14"x6" Hendey, Yoke Head, Q. C.

Grinders

- No. 70 Heald Grinder.
- No. 60 Heald Grinder.
- 10"x52" Landis, self contained, late type
- 16"x48" Landis Crankshaft, late type,
self contained.
- No. 2 Landis, Universal.
- 10"x36" Landis, self contained.
- 6"x18" Landis, self-contained.
- No. 1 LeBlond Tool Grinder.
- Modern Chaser Grinder.

- No. 1 1/2 Valley City, Plain.
- No. 14 1/2 Becker Universal.
- No. 2 Kempnath Universal.
- No. 6 Whitney Hand Millers.

Planers

- 16x16x36" Pratt & Whitney Planer.
- 24"x24"x6" Lodge & Davis Planer.
- 26"x26"x12" Whitcomb-B., 2 heads.
- 36"x36"x12" Gray, 2 heads.
- 48"x48"x16" D. & H. Opens. 2 hds.
- 42"x36"x20" Gray Planer.

Radial and Upright Drills

- 5" Cincinnati-Bickford, Gear Box
S. P. D. Enclosed head.
- 4" Morris Semi-Enclosed Hd., S.P.D.
with motor.
- 4" Bickford, S. P. D. thru gear box.
- 3" Carlton, Speedy-Sensitive, cone dr.
- 26" Cincinnati Upright, C. D.
- 26" Rockford, T. A., C. D.
- 26" Rockford Upright, C. D.
- 6-spindle Rockford 20" B. G. P. F.
- 20" Barnes Camel Back.

**21"x10" LeBlond Heavy Duty Lathe.
Geared head. Single pulley drive.
Quick Change. Excellent Condition.**

Gear Cutters

- No. 3-26" Brown & Sharpe, late type.
- No. 3-36" Brown & Sharpe, late type.
- 36" Whiton Auto. Bevel & Spur.
- No. 1 Farwell Gear Hobber.
- 18-H Gould & Eberhardt Hobber.
- 18" Schuchardt & Schutte Hobbers.

Boring Mills

- 42" Bullard Rap. Prod. One plain and
one turret head.
- 60" Bullard, Vertical 2 heads.
- 34" Gisholt Vertical one turret head.
- 96" Bickford Vertical.
- No. 2 Becker Vertical Rotary table.
- No. 2-A Becker Vertical Rotary table.
- No. 1 Rockford, Horizontal 2" bar.

Milling Machines

- No. 5 Brown & Sharpe Plain.
- No. 4 Cincinnati, Plain.
- No. 3 Cincinnati, plain.
- No. 3 Brown & Sharpe, Plain.
- No. 28 Osterlein, Plain.

Shapers

- 15" Smith & Mills.
- 24" Barker, B. G. Crank.
- 24" Gould & Eberhardt, Crank, B.G.
- 24" Hendey.
- 20" Steptoe B. G. Crank.

Miscellaneous

- 1" National Bolt Cutter, complete.
- 1 1/2" Acme double spindle Stay Bolt
Cutter, with Landis Heads.
- 1 1/2" Landis Bolt Threader, late type,
lead screw.
- No. 2 Kane & Roach Multiple P. & S.
50 lb. Little Giant Hammer.
- No. 2 Mitts & Merrill Keyseater.
- 1/4" Landis Double Spdl. Bolt Cutter.
- No. 42 Toledo Press.
- Wickes Punch & Shear, 48" throat,
1 1/4" thru 1 1/4".
- No. 8 Long & A. Punch & Shear.
- No. 1 Badger State Alligator Shear.
- No. 2 Warner & Swasey Turret Lathe.
- No. 2 Garvin Vertical Tapper.

Write for Complete Catalogue—We Buy, Sell and Exchange

Cincinnati Machinery & Supply Co.
28 West Second St., CINCINNATI, OHIO

Real Bargains—Your Chance

60"x60"x18' POND planer—two heads.....	\$ 795.00
4' Dreeses plain radial drill.....	350.00
5' Dreeses plain radial drill.....	475.00
20" Newton coldsaw cutoff machine.....	325.00
4-spindle nut tapping machine.....	300.00
6' Niles type plate bending roll ½" cap.....	575.00
500 lb. Beaudry power hammer-belt drive.....	450.00
Pels 15" cap. "I" beam shear-belt drive.....	575.00
Goulter & McKenzie shear 22" bet. housing, 1½" cap.....	275.00
3¼" Gridley single spindle auto. screw machines.....	350.00
36" Cleveland single-end punch—arch jaws.....	875.00
36"x33" N. B. P. heavy-duty geared head production lathe.....	975.00
Niles 28"x28" LCG solid spindle engine lathe.....	225.00
No. 53 National Acme 4 spindle automatic screw machine.....	275.00
No. 1½ Cincinnati universal milling machine.....	200.00
16x10 L. & S. semi Q. C. G. lathe.....	135.00
No. 7H. Becker Lincoln type millers.....	150.00
No. 2½ Hendey Lincoln type millers.....	125.00
2 ton new portable floor cranes.....	59.75
30 ton new garage screw press.....	49.75
1½" National double-spindle bolt threader.....	275.00
Catlin keyseater 14x14" table with c/s.....	175.00
1½" Ajax forging machine.....	1475.00
36" Aurora vertical power feed drill press.....	295.00
30" Sibley vertical power feed drill press.....	125.00
NEW BRITAIN drop head Polishing & Buffing machines.....	27.50

HARRIS BROTHERS COMPANY

West 35th and Iron Sts.,

Chicago, Illinois

Unusual Machinery Bargains

- 4' Triple Purpose American Radial Drill, motor drive.
- 4' Morris Radial Drill, gear box drive.
- Nos. 4 and 14 Colburn Drill Presses.
- No. 2-B Edlund 4 spindle H. S., B. B. Drill (new machine) individual motor drive to each spindle.
- No. 13-C Natco Multiple Spindle Drill, 12 spindles.
- No. 3-A Warner & Swasey Screw Machine.
- 16" and 18" Hendey Lathes, taper attachment and draw-in.
- No. 3-S Cincinnati Plain Miller, S. P. D. slotted spindle nose.
- No. 2 Brown & Sharpe Vertical Miller, S. P. D., P. R. T.
- 24" New Era Type Bullard Boring Mill, side head.
- 24" Gould & Eberhardt Back Geared Cone Shaper.
- No. 7 Fellows High Speed Spur Gear Shaper, M. D.
- 24" G. & E. Back Geared Shaper, M. D., constant speed motor.
- 32" Stockbridge Shaper, Motor Drive, A. C. motor.
- No. 5-A Lees Bradner Gear Generator.
- 12" Dreis & Krump Power Brake, ½" capacity.
- 50 ton Lucas Forcing Press.
- 5—No. 11 Brown & Sharpe Plain Grinders, self contained.
- 14" Pratt & Whitney B. B. Vertical Grinder.
- 2" Model B. Cleveland Automatics, late type.
- No. 2 Brown & Sharpe Automatic, serial No. 4300.
- Foote Burt Cylinder Honing Machine, single spindle.

International Machinery Co.

140 E. Larned St.,

Detroit, Mich.

1", 1½", 2½" Acme Upsetter or Header, steel frame, vert. release.
 1½", 2" 2½", 3" Ajax.
 1", 1½", 2" National Wedge Grip Bolt Header and Forging Mche.
 Nos. 1, 2, 4, 7, 9, 26 and 29-U Williams-White & Co., Bulldozers.
 No. 26 Williams & White Bulldozer with reversible clutch, mtr. dr.
 50, 75, 100, 150, 200 and 300 lb. Bradley Upright Hammers.
 40, 60, 80, 100 and 200 lb. Bradley Cushioned Helve Hammers.
 Nos. 2-B and 4-I Nazel Air Forging Hammers.
 1500-3500 lb. Erie Steam Forging Hammers.
 No. 55 Toledo S. S. Grd. Press; No. 3 Massillon Trimming Press.
 Nos. 1 and 2½ Billings & Spencer Straight Sided Trimming Presses.
 Nos. 10 and 20 Quickwork Rotary Shears, 60" and 30" throat
 No. 52-A Waterbury-Farrel 8-hole Dial Press.
 No. 37½ Bliss S. S. Press, 6½" stroke.
 Solid Back Presses: Nos. 3 and 4 Stiles Patt., No. 33 Toledo, No. 34
 Toledo Grd., No. 3-A Bliss Adjust. Bed; No. 16 Bliss Hor. Pr.
 Rock River Sgl. End Punch, 16" thrt., arch. jaw, cap. 1" thru 1".
 Style EF Cleveland SE 24" throat, cap. 1¼" thru 1", arch. jaw.
 No. 2 Hilles & Jones SE, 20" throat, cap. 1" thru ¾", rapid action MD.
 Long & Allstatter Single End Punch, 48" throat, cap. 2¼" thru 1".
 Toledo Gate Shear, Geared cap. 60" x No. 11 gauge.
 New Doty Guillotine Shear, cap. 3½" round, MD.
 K. S. 35 Pels Armor Plate Shear, cap. 3-¾" rd. cold 5½", rd. hot.
 Nos. 2 and 3 Ryerson Friction Saws.
 Die Sinks: No. 3 P.&W. No. 5 Jackson; Nos. 5 and 6 Becker.
 12" Wall Radial Drill for Structural Work, M. D.
 Threading Machines: 1 & 2-sp. Acme & Landis 1" to 4" Single Sp.
 1", 1½", 2" Landis 2-Spindle with and without lead screws.
 Thread Rollers ¾", ½", ⅜" and ¼" capacity.
 Pipe Threaders, Williams 8"; Saunders 4".
 Thread Rollers, Cold Headers and Bolt Trimmers, Bolt Pointers,
 Nut Tappers and Hot Pressed Nut Machines.
 6 & 8-Sp. National and Acme Semi-Auto. Nut Tappers, ½" to 1½".
 Blakeslee Metal Washer, motor drive.
 Wire Straighteners, 3/16", ¼", 5/16" and ¾", Shuster, Etc.
 No. 1A Am. Carbonizing Furnace, Nichrome Retort & Heat Contr.
 No. 65 American Gas Heating Furnaces.
 General Electric Centrifugal Compressors.
 Lennox Throatless Shear, cap. 1½".
 Williams Chip Crusher or Shredder; Forging & Spring Tapering Rolls.
 Double Disc Grinders, various makes and sizes.
 Mercury Storage Battery 3-Wheel Tractors.

Donahue Steel Products Co.

Specialists in Forging, Bolt, Nut and Rivet Machinery

74th and Ashland Ave.,

Chicago, Ill.

REAL VALUES

30" Colburn vertical boring mill—5 hole turret head	\$475.
20" Barnes "Camel Back" drill press—4 spindle	500.
Avey High speed—Ball Bearing—three spindle drill press	325.
4 Foot radial drill, cone drive	500.
12"x6" Hendey lathe, taper attachment—fully equipped	300.
16"x8" Lodge & Davis, lathe, L. C. G. chuck and C/S	115.
22" Barnes drill press, back geared, power feed	85.
20" Channon drill press, back geared, power feed	75.
Gray O. B. I. Punch press, 1 3/4" stroke	165.
Toledo No. 30 Solid back press, floor type	75.
No. 2 Hand screw machine, chuck and collets	85.
16"x6" Von Wyck lathe, fully equipped	175.

SPECIAL—Electric Drills

1/4 inch capacity, "THOR" heavy duty, full ball and roller bearing, complete with 3 jaw Jacobs chuck, heavy duty cord and plug, 110 volts, universal current, **\$18.75 each.** Fully guaranteed with a money back guarantee if not satisfactory after 10 days trial.

MIDWEST EQUIPMENT CO.
624 W. Lake St., Chicago, Ill.

EXCEPTIONAL TOOLS

VERTICAL BORING AND TURNING MILLS

- 25" Sellers, Two swivel heads, Table 20" dia., Motor Drive.
- 96" Betts, Two swivel heads, Table 96" dia., Motor Drive.
- 68" Betts, Two swivel heads, Motor Drive.
- 60" and 42" Bullard, Two swivel heads, Single Pulley Drive.

MILLING MACHINES

- No. 5 Cincinnati Rectangular over-arm High Power Plain, P. R. T.
- No. 4 Cinti. High Pwr. Pl., P. R. T.
- 60"x60"x15" Newton Planer Type.
- No. 2 Cincinnati Vertical, Rotary Table, Power Rapid Traverse.
- No. 1 1/2-B Milwaukee Vertical.
- Hand Millers, etc.

RADIAL DRILLS

- 4" Cincinnati-Bickford Plain.
- 6" Drees Semi-Universal.
- 5" Baush Plain.
- 4" American Plain.
- 5" Niles-B.-P., Semi-Universal.
- 3" Drees Plain.

MISCELLANEOUS

- Lathe, 36"x30" Pond, Geared Hd.
- Lathe, 36"x22" Pond.
- Turret Lathe, 18" Libby, S. P. D.
- High Speed Drill, 4 Spindle B.B.
- Leland-Gifford, Power Feed.
- Shaper, 24" Gould & Eberhardt.
- Automatic, No. 24 New Britain.
- Automatics, Nos. 5A & 6A P. & J.
- Duplex Drill, No. 1-S Garvin Hor.
- Pipe Machine, 8" Jarecki, S.P.D.

GUARANTEED CONDITION

Sun Machinery Company, Inc.
39 Hamilton St., Newark, N. J.

(We are interested in buying Machinery—What have you for sale)

Automatics, Nos. 53 & 55 Nat. Acme.
Automatic, No. 24 New Britain.
Bolt cutter, 24" Acme double head.
Boring mill, 60" Niles B. P.
Boring mill, 42" Bullard, 2 heads.
Bor. mill, 30" Colburn, 1 turret hd.
Brake, 8' x 16" Robinson m. d.
Brake, 6' x 10 gauge Dries & Krump.
Brake, 52" Peck Stow hand brake.
Cutting off machine, 6" H. & R.
Grinder, 14" Pratt & W. vert. surf.
Grinder, No. 2 Landis, univ.
Hammer, 300 lb. Beaudry motor dr.
Keyseater, No. 2 Catlin 1"-2".
Lathe, 26' x 14' McCabe, dbl. sp.
Lathe, 26' x 12' Greaves-Klusman.
Lathe, 24' x 24' Schumacher-B., cone.
Lathe, 27' x 16' Reed-P., g. h.
Lathe, 20' x 12' Hendey, q. c. g.
Lathe, 17' x 10' L. & S. q. c. g., taper.
Lathe, 15' x 10' Monarch, q. c. g.
Lathe, 16' x 18' L. & S., q. c. g.
Lathe, 20' x 8' L. & S. select hd.
Lathe, 18' x 8' Porter.
Lathe, 18' x 6' Rahn-L., q. c. g., taper.
Lathe, 14' x 8' Porter.
Lathe, 12' x 5' Hendey, taper, draw.
Lathe, gap, 28' x 12' Harrington.
Lathe, turret, 14' x 18", P. & W.

Lathe, turret, 2x24 J. & L.
Milling mch., No. 4GS Hendey pl.
Milling mch., No. 3 Cincinnati cone.
Milling mch., No. 2HP Milwaukee.
Milling mach., No. 3B Milwaukee.
Miller, No. 14 Garvin, vertical.
Miller, No. 3 Becker vertical.
Miller, No. 14-A Garvin plain.
Pipe machine, 8" E. C. & B., belt.
Pipe mch., 8" Saunders, belt dr.
Pipe machine, 6" Saunders 24-6".
Pipe machine, 6" Oster belt.
Pipe machine, 3" Jarecki No. 7B.
Pump, 54' x 8x7 Worthington, new.
Punch, 24" L. & A. No. 4 s. e.
Punch, shear, No. 4 Buffalo Univ.
Radial drill, 4' Drees, s. p. d.
Radial drill, 4' Bickford, gear box.
Radial drill, 34' Mueller, cone.
Radial drill, 34' Bickford, gear box.
Radial drill, 3' Western, motor.
Saw, cold 22" blade Gleim, 6" cap.
Shaper, 24" Hendey friction.
Shaper, 16" Smith & Mills b. g.
Shear, 8' x 3/16" Niagara No. 796.
Shear, 52' x 16 gauge Niagara No. 552.
Shear, 30" Niagara power.
Turret lathes, No. 1B Foster univ. (2)
Wheel press, 200 ton Putnam hydr.

Bennett Machinery Co.

30 Church St.,

New York City

10 Used Polishers

with Tight and Loose Pulleys

Timken Bearings



Regular
Price
\$105.00

Spindle—50"
overall, 1 1/4"
between flanges.

\$77.50
Each

Johnson
Roller Rack Co.
Kalamazoo, Mich.

SELLING OUT

Building and All Machinery

24" Bullard Vertical Turret.
 3-14" Pratt & Whitney Vertical Surface Grinders.
 50-Single Action, Double Action, and Dial Feed Presses.
 12x30 Landis Self Contained Grinder.
 Several other Cylindrical Grinders.
 3/4 and 3/8 Cleveland Automatics.
 4-Radial Drills.
 Four Spindle Barnes Drills.
 Seven Spindle Henry & Wright.
 2-No. 3 1/2 Double Stroke S. D. Headers.
 New Britain Chucking Machines.
 42" Bullard Vertical Boring Mill.
 4" Binnac Horizontal Boring Mill.
 250 Ton Knuckle Joint Presses.

250 other items of miscellaneous machinery

A. C. BORGMAN 808 Union Avenue,
BRIDGEPORT, CONN.

Quality Tools

No. 3 Ohio Universal Miller, fully equipped....	\$1150.
3-Spindle Allen Drill H. S., B. B.	475.
1-Spindle Leland & Gifford Drill, H. S., B. B.	150.
26" Barnes Drill, S. H., B. G., P. F.	195.
24" Barnes Camel Back Drill.....	275.
No. 1 Garvin Tapper.....	150.
No. 3A High Speed Riveting Hammer	175.
No. 4A High Speed Riveting Hammer.....	250.
2" Nat'l Bolt Cutter 37 sets dies 1/2 to 2"	355.
2" Bignall & Keeler Pipe Machine, P. D., Q. C.	375.
3" Bignall & Keeler Pipe Machine, P. D., Q. C.	475.
16" Steptoe Back Geared Shaper.....	475.
24" Rockford Back Geared Shaper.....	925.

Geo. M. Bernstein & Co.
 221 N. Elizabeth St., Chicago, Ill.

LOOK-OVER-THIS-LIST

10' POORMAN PRESS BRAKE, $\frac{3}{16}$ " CAPACITY.

Presses

No. 63-A Waterbury-Farrels.s.,b.g.,
21" between housings.
No. 15 Waterbury Plain, s. s., 24"
between housings.
Nos. 42 and 44 Toledo Horn Press.

Drills

2-Avey single-spindle, B. B.
1-Henry & Wright sgl.-spdl., B. B.
1-Barr six-spindle, power feed.
1-6' Dreses plain radial, motor dr.
1-3' Mueller plain radial, cone dr.
1-24" Foote Burt Heavy Duty Drill.
1-Rockford Heavy Duty Drill.

Punches

No. 6 Whiting s. e., B. G., $\frac{1}{4}$ thru $\frac{1}{2}$.
4-No. 15 Toledo deep throat.
Bertsch Rapid Production, 18" thrt.,
archt. jaw.

Shapers

24" American B. G., Crank.
24" Queen City Heavy Duty, B. G.,
Crank.
20" Steptoe B. G., Crank.
16" Steptoe B. G., Crank.
16" Ohio Plain, Crank.

Millers

No. 1 $\frac{1}{2}$ Valley City Plain.
No. 28 Oesterlein Plain cone drive.
No. 3 Cincinnati Plain cone drive.
No. 2 Becker Vertical.
No. 2 $\frac{1}{2}$ LeBlond Universal.

Key Seaters

No. 00 Baker belt drive.
No. 2 Baker belt drive.

We are in the market to purchase first class machinery: What have you for sale?

THE JONES MACHINE TOOL COMPANY
Front & Pike Sts., Cincinnati, Ohio

Bolt Cutters

2 $\frac{1}{2}$ " cap. Acme Double Head.....\$450.
2" cap. Acme Double Head..... 425.
2-1 $\frac{1}{2}$ " cap. Acme Double Head, lead
screw type (each)..... 475.
No. 3 Adams Double Head 1" cap..... 150.
2 $\frac{1}{2}$ " cap. Acme Single Hd. lead screw type 350.

Air Compressors

10x10 Curtis, Double Cylinder.....\$500.
6x6 Curtis, Double Cylinder..... 325.
6x6 Gardner Double Cylinder..... 200.
6x6 Curtis, Single Cylinder..... 150.

Leather Belting-Pulleys-Hangers

Tubor-Velick & Co. Inc.

630 W. Lake St. CHICAGO Phone Monroe 4199

Good Tools at a Reasonable Price

The following is an illustration of our stock

GRAY PLANER 30"x30"x8', 2 heads on cross rail, arranged for belted motor drive without motor, in very good condition.....	\$ 950.
AMERICAN PLANER 30"x30"x10', one head on cross rail, in very good condition and cheap at.....	650.
GISHOLT 24", 2 step cone, 6¼" face, 5" hole thru spindle, taper attachment, lots of extra equipment, a good serviceable tool.....	650.
MOLINE DRILL "Hole Hog" 4 spindles, No. 5 taper, 2 individual tables 17¼"x32", oil pump and pan, weight 17500 lbs. Equal to new.....	1000.
MITTS & MERRILL KEYSEATER No. 2, cap. from 0 to 1¼", for all practical purposes equal to new	350.

The Co-Operative Machinery Co.
7514 Indiana Ave., Cleveland, Ohio

Several Used O. B. I. Presses.

3—No. 45 Consolidated Gap Frame Presses, 2½" stroke, Weight 6200 lbs.

1—S-51 Ferracute D. C. Press.

1—Adriance D. C. Press, 33" width, Weight 5,000 lbs.

1—No 203-B Toledo D. C. Press with Special Feed for Cut and Carry Work.

1—⅞" Cleveland Automatic Screw Machine, Serial 30,000.

1—¾ Bushel National Oil Separator.

1—No. 15 Lea-Simplex Cold Cut Off Saw.

Also Large Stock of New and Used Pexto Sheet Metal Working Machinery.

J. P. Rentschler & Company

Phone Monroe 4821

607 W. Washington Blvd., Chicago, Ill.

Over 2000 Machine Tools In Stock

**Low Prices—30 Day Guarantee
Prompt Shipment**

*Send for Copy of our
RED BOOK*

*containing pages and pages of
machine tool values.*

Louis E. Emerman & Co.
1761 Elston Ave., Chicago



REBUILT POWER PRESSES NEW

Bliss, Toledo, Ferracute, Etc.

1200 PRESSES IN STOCK—

Double Crank,
Inclinable, Knuckle Joint Embossing
and All Other Types

Joseph HYMAN & Sons
POWER PRESS SPECIALISTS

2600 East Tioga St.,

Philadelphia, Pa.

Analysis of Circulation of HITCHCOCK'S MACHINE TOOL BLUE BOOK

By Dun and Bradstreet Ratings

(Corrected to August 1st, 1929)

To domestic concerns, and superintendents, works managers, production engineers, etc., in such concerns rated at—

Exceeding \$1,000,000.....	1,883
\$500,000 to \$1,000,000.....	1,426
\$300,000 to \$ 500,000.....	1,348
\$200,000 to \$ 300,000.....	1,212
\$125,000 to \$ 200,000.....	1,675
\$ 75,000 to \$ 125,000.....	1,786
\$ 50,000 to \$ 75,000.....	1,507
\$ 20,000 to \$ 50,000.....	3,167
\$ 10,000 to \$ 20,000.....	2,084
\$ 5,000 to \$ 10,000.....	1,777

TOTAL to Private Concerns of over \$5,000.. 17,865

Steam and Street Railway Mechanical and Purchasing Officials, Government and Municipal Plants, Technical Schools, Selected Foreign Dealers and Users, Etc.,.....	2,927
--	-------

TOTAL to Buyers of Known Responsibility.. 20,792

*Concerns quoted in Dun or Bradstreet, but without Capital Rating.....	2,652
--	-------

Concerns not yet in either Dun or Bradstreet, which includes new industries.....	1,514
--	-------

Concerns rated \$3,000 to \$5,000.....	620
--	-----

TOTAL CIRCULATION 25,578

*This group includes a considerable number of large concerns, and some small ones of high credit, whose capital rating is not given by either of the commercial agencies.

Guaranteed Rebuilt Machine Tools

Heavy Oil Tools Our Specialty

LATHES

2-26"x14" Bridgeford q.c. Taper.
2-26"x16" Bridgeford q.c. Taper.
26"x22" Bridgeford, G. H. Taper.
24"x18"-27"x18" Lodge & Shipley
Geared Head, Taper, Chuck.
LODGE & SHIPLEY Selective
Grd. Hd., 1-16"x8" 1-20"x12",
1-24"x16", 1-27"x16", with
Tapers, Chucks.
Other size Lathes, 12" to 32".
30"x11" Lodge & Shipley, mtr. dr.

TURRETS

GISHOLT, 24"x6 1/4", arr. silent
chain m. d., Taper, Chuck
3"x36" Jones & Lamson, Grd. Hd.

GRINDERS

Reed Prentice, 14"x72" Surface,
arr. motor drive. Like new.
No. 70 Heald Internal.

MILLING MCHS.

No. 3H LeBlond Univ. and attach.
No. 3 Kempsmith Univ. & attach.
No. 3B Brown & S., single pulley,
No. 3 LeBlond pl., all power feed.

RADIAL DRILLS

5' American, single pulley drive.
3' Morris, single pulley drive.

MISCELLANEOUS

Cold Saw, Newton 26" saws.
50 Ton Lucas Press, Gear Cutters.

Many Others—All Sizes and Makes

CATALOG SENT ON REQUEST

THE MARKET PLACE FOR WESTERN STATES—OUR PRICES ARE LOWEST

Modern Machinery & Supply Co.
470 East Third St., Los Angeles, Calif.

(We Purchase single Machines or Entire Plants)

Special Offering of Rebuilt Machine Tools!

36"x36"x12" American Planer, Self-Contained, arranged for Motor
Drive, Two Side Heads, One Head on Cross Rail.

24" Cincinnati, Back Geared Shaper.

24" Gould & Eberhardt Back Geared Shaper.

No. 2AS Milwaukee Double Overarm Miller, Single Pulley Drive.

No. 2 Cincinnati Universal Miller, Fully Equipped.

No. 3 Kempsmith Plain Miller, with standard equipment.

18"x8" American, Q. C. G. Heavy Duty Lathe with standard equip.

12"x5" Hendey Tool-Room Lathe, Taper Attachment, Late Type.

5' Bickford Radial Drill, Single Pulley Gear Box Drive.

24" Cincinnati Sliding Head Drill Press, Back Geared.

3/8"-1/2" Cleveland Automatic Screw Machine, Serial No. 22888.

5/8"-7/8" Cleveland Automatic Screw Machine, Serial No. 24562.

Descriptive Literature Sent Upon Request

Midland Equipment Co., Inc.
400 So. Clinton St., Chicago, Ill.

Index of Advertisers

A

Abbott Ball Co.	44
Acme Industrial Co.	109
American Hollow Boring Co.	104
American Spiral Spring & Mfg. Co.	139
American Tool Works Co.	2-157
American Tool Works, Inc.	105
Ames Co., B. C.	99
Anderson Bros. Mfg. Co.	101
Armstrong & Bro. Co., R. S.	135
Armstrong Bros. Tool Co.	100
Armstrong-Blum Mfg. Co.	20-21
Arnold Co., Inc., H. H.	98
Atlantic Company	35
Atlas Press Co.	77
Avey Drilling Machine Company	Front Cover-22-23

B

Badger-Packard Machinery Co.	128
Baker Brothers, Inc.	4
Bath & Co., Caryl J.	148-149
Baumbach Mfg. Co., E. A.	89
Bennett Machinery Co.	177
Bernstein & Co., Geo. M.	178
Bicknell-Thomas Co.	66
Borgman, A. C.	178
Boston Gear Works Sales Co.	72
Bradford Machine Tool Co.	8
Bradley Machinery Co.	125
Brewster Co., Wm., Inc.	58
Broadway Machinery Co., Inc.	160
Brown Machinery Co.	140
Brown & Sharpe Mfg. Co.	3
Brownell Machinery Co.	137
Buffalo Forge Co.	79
Burke Machine Tool Co.	79
Burt & Son, John T.	86

C

Candey-Otto Mfg. Co.	24-25
Canton Foundry & Mche. Co.	84
Canton Pneumatic Co.	102
Carlson Machinery Co.	125
Carroll Machine Tool Co., A. V.	68
Carroll & Jamieson Mch. Tool Co.	69
Central States Machinery Co.	164
Chard Lathe Co.	71
Chicago Gear Works	72
Chicago Tool & Engineering Co.	114
Chicago Wire Chair Co.	102
Cincinnati Lathe & Tool Co.	7
Cincinnati Mch. & Supply Co.	173
Cincinnati Milling Machine Co.	5
Cincinnati Planer Co.	15
Cincinnati Specialty Mfg. Co.	89
Cleveland Planer Co.	14
Cleveland Twist Drill Co.	93
Clinton Machinery Co.	136
Colven, James M.	83
Conradson, C. M.	19
Conway Clutch Co.	13
Co-Operative Machinery Co.	180

D

Danly Machine Specialties, Inc.	88
Davis Keyseater Co.	40
Davis Machinery Exchange	126
Defiance Machine Works	27
Detroit Machine Tool Co.	81
Detroit Stamping Co.	106
Donahue Steel Products Co.	175
Dorman, John H.	78
Drees Machine Tool Co.	26

E

Eastern Machinery Co.	146-147
Economy Engineering Co.	90-91
Edgemont Machine Co.	107
Emerman & Co., Louis E.	181
Esley Machinery Co., E. L.	172
Excelior Tool & Machine Co.	51

F

Fall River Grinding & Mche. Co.	77
Fay & Scott	83
Federal Products Corporation	99
Fitchburg Grinding Mche. Corp.	138
Foote Bros. Gear & Machine Co.	73
Foote-Burt Co.	28
Foster Machinery Co.	140
Frew Machine Co.	38
Fulflo Specialties Co.	54

G

Gallmeyer & Livingston Co.	29
Gardner Machine Co.	18
General Machinery Corporation	136
Gits Bros. Mfg. Co.	112
Glenzer Co., J. C.	
Gockel, Arthur P.	126
Grant Mfg. & Machine Co.	105

H

Hagen, H. J.	103
Hamilton Tool Co.	69
Hammond Mchry Builders, Inc.	31
Hammond Manufacturing Co.	96
Hardinge Brothers, Inc.	43
Harris Bros. Co.	174
Hartford Special Machinery Co.	81
Hendley & Whittemore Co.	187
Hill, Clarke & Co., of Chicago	150-151
Hisey-Wolf Machine Co.	
Inside Back Cover	
Hobbs Supply Co., W. H.	141
Howarth Co., C. C.	138
Hunt & Son, C. B.	57-110
Huther Bros. Saw Mfg. Co., Inc.	48
Hyman & Sons, Joseph	181

I

Illinois Machine & Mfg. Co.	32
Indiana Machinery Co.	125
Indianapolis Machinery & Supply Co.	156
International Machinery Co.	174

Index of Advertisers—Continued

J

J. & H. Electric Co., Inc.	87
Jarecki Machine & Tool Co.	70
Johnson Roller Rack Co.	177
Johnson & Sons Mch. Co., Wm. C.	130
Jones Fdry. & Mche. Co., W.A.	188
Jones Machine Tool Co.	179

K

Kearney & Trecker Corp.	143
Keller Mechanical Engineering Corporation	56-111
Kinsey Co., E. A.	158
Klauber Machinery Co., E. L.	134

L

LaPorte Machine & Tool Co.	53
LeBlond Mch. Tool Co., R. K.	94-95
Lehmann Machine Co.	33
Leland-Gifford Co.	37
Lewthwaite Machine Co., T. H.	107
Linley Brothers Co.	106
Little Co., W. P.	137
Louise Manufacturing Co.	76
Lucas & Son, Inc., J. L.	141
Luma Electric Equipment Co.	60

M

McCabe Lathe & Mch. Corp., J. J.	167
McDonald Machinery Company	134
Mall Tool Co.	111
Manning, Maxwell & Moore, Inc.	166
Marr-Galbreath Machinery Co.	131
Martin Tool & Die Works, J. E.	82
Massachusetts Gear & Tool Co.	73
Midland Equipment Co.	183
Midwest Equipment Co.	176
Mid-West Machine Tool & Supply Co.	136
Miles Machinery Co.	165
Modern Machinery & Supply Co.	183
Molitor Machinery Co., Chas.	133
Monarch Machine Tool Co.	Inside Front Cover
Morey and Co. Inc.	170
Morris Machine Tool Co.	71
Moitch & Merryweather Mch. Co.	144-145

N

National Acme Co.	12
National Electric Products Co.	52
National Machine Tool Co., Cincinnati, Ohio	86
National Machine Tool Co., Racine, Wis.	100
Nelson Machinery Co.	136
New Britain Machine Co.	Back Cover
Nicholson & Co., W. H.	66
Norton-Broadway Mch. Co.	132-142

O

O'Brien Machinery Co.	138
Oesterlein Machine Co.	16
Ohio Gear Co.	74
Oliver Instrument Co.	88
Onarud Machine Works, Inc.	30
Osborne & Sexton Mch. Co.	162

P

Palmer-Edwards Co.	163
Pedrick Tool & Machine Co.	45
Peerless Machine Co.	84
Peerless Surfacing Machine Co.	87
Pitts & Kitts Mfg. & Supply Co.	109
Porter-Cable Machine Co.	75
Procurier Safety Chuck Co.	103

R

Racine Tool & Machine Co.	85
Rahn-Larmon Co.	10
Randle Machinery Co.	139
Reed-Prentice Corporation	9
Reeve-Fritts Company	130
Reliance Mch. Sales Co.	128
Rentschler & Co., J. P.	180
Reynolds Machine Company	34
Rickert-Shafer Co.	39
Riverside Machinery Depot	154-155
Rockford Iron Works	76
Rosenfeld Machinery Co.	168
Russell Machine Co.	55
Ruthman Machinery Co.	55

S

Schellenbach-Hunt Tool Co.	124
Scherr Co., George	74
Schwerdtle Stamp Co.	104
Scott-Bansbach Machinery Co.	129
Scully Steel & Iron Co.	114
Scully-Jones & Co.	115
Sebastian Lathe Co.	6
Seifert-Elsat Machinery Co.	172
Sheldon Machine Co.	62
Sidney Machine Tool Co.	11
Sigourney Tool Co.	82
Smith & Mills Co.	68
Springfield Machine Tool Co.	101
Standard Electrical Tool Co.	92
Standard Gage Co., Inc.	98
Standard Shop Equip. Co., Inc.	36
Stecher Co., Chas.	65
Stevens Inc., John B.	138
Stockman, John A.	125
Stoehr Machinery Co., A. M.	110
Stow Flexible Shaft Co.	135
Strafer Machinery Co.	59
Strand & Co., N. A.	59

Index of Advertisers—Continued

Strombeck-Becker Mfg. Co.....	141
Strong, Carlisle & Hammond Co.....	152-153
Sun Machinery Co.....	176
Sundstrand Machine Tool Co.	97
Superior Machine Tool Co.....	78
Superior Machine & Eng. Co.	42
Superior Spring Winding Tool Co.	108
Syracuse Supply Company.....	132

T

Taylor-Hall Welding Corporation	139
Taylor & Fenn Co.....	46
Thompson Grinder Co.....	75
Townsend Mfg. Co., H. P.....	108
Toledo Machinery Exchange.....	171
Tolhurst Machine Works.....	113
Triplex Machine Tool Corp.....	70
Tubor-Velick & Co.....	179
Tucker, W. W. & C. F.....	113

U

United Machinery & Supply Co.	139
United States Drill Head Co.....	80
U. S. Electrical Tool Co.....	17

United States Machine Tool Co...	80
Used and Rebuilt Machinery	125 to 183

V

Victor Saw Works, Inc.....	85
Vim Electric Tool Company	63

W

Walls Sales Corporation.....	41
Walton Co.	115
Wardwell Manufacturing Co.....	49
Wells Manufacturing Corporation	50
Wertman Machinery Co., M. A.	140
West Penn Machinery Co.....	127
Western Tool & Mfg. Co.....	64
White Machinery Co., A. D....	169
Whitney Metal Tool Co.....	67
Wigglesworth Machinery Co.....	159
Wilson, K. R.	47
Winterer, Herman L.....	161
Winterhoff Tool & Machine Co.	61

Y

Yohs Supply Co., Wm. S.....	112
-----------------------------	-----



A CHAIN

The advertisers in the Blue Book pay Hitchcocks. They send you the Blue Book free. You buy the articles advertised. So far, so good.

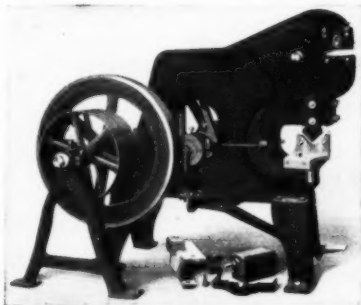
BUT—

—suppose the advertisers do not know that you saw their ad in the Blue Book, how will Hitchcocks get credit? When writing to advertisers, won't you kindly mention our name? Thanks!



BELOIT

Combined Power Punch and Shear



Arranged for belt or motor drive

Indispensable For Any Shop

THE BELOIT Combined Power Punch and Shear is actually three machines in one, as it combines the single end punch with alligator shear for flat bars, and the round cutters for round bars—and this three purpose machine sells for the price of a single end machine!

The BELOIT has proven itself to be the most serviceable and successful on the market today, regardless of price. It is sturdy, well built, compact, quiet, easy to operate, and can be equipped with angle shearing attachment, angle notching and coping attachment if desired. Built in seven sizes.

Write Today for Catalog and Prices

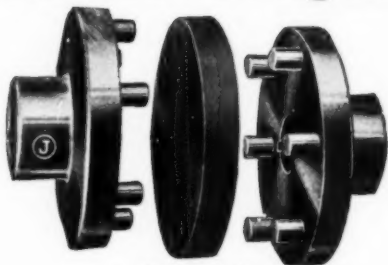
Hendley & Whittemore Co.

100 S. State St., BELOIT, WIS.

PUNCHES—SHEARS—BENDING ROLLS

Jones

Flexible Coupling



Style "A"

A reasonably priced very efficient and desirable Flexible Coupling.

It consists of two **semi-steel** Flanged Discs fitted with Steel Pins, which engage the center disc, this center disc is of special vulcanized Fabric assuring a long life and a quiet smooth running Coupling.

Standard sizes in stock for immediate shipments.

Send your orders.

W. A. Jones Foundry & Machine Co.
4450 W. Roosevelt Rd. Chicago, Ill.



NEW High-Speed Grinder — for *Faster Snagging*

THIS new Hisey Grinder stimulates production and establishes low-cost records on every snagging job. It handles with ease the large super-speed grinding wheels that operate economically at 9500 s. f. p. m.

Built in both the Single- and Multi-Speed types, the Hisey High-Speed Grinder incorporates every desirable feature for high-speed snagging; strength, convenience of operation, freedom from vibration, ruggedness, safety and simplicity.

Bulletin No. 43 illustrates 18 practical features that simplify snagging operations. Write for your copy.



*Agents in All
Principal Cities*

THE HISEY-WOLF MACHINE CO.

*"It's High Grade
If Hisey Made"*



Established 1896
CINCINNATI, OHIO, U.S.A.

MAJOR DEALERS: GUINNESS, LONDON

NEW BRITAIN Smooth Top STEEL BENCHES



At Last—
A Smooth Top Steel Bench!
The last word in Steel Benching

Among the many features are—

- Perfectly smooth top.
- No bolt or screw heads protruding.
- No danger from splinters.
- No fire hazard—no oil soaked top.
- No warping or twisting.

Made in following standard lengths: 3', 4½', 6' and 9'.

These benches can be made continuous in any multiples of above lengths.

New Britain Smooth Top Steel Benches are in keeping with modern trends.

Send for new bulletin just issued.

Shop Furniture Division

The New Britain Machine Co.
New Britain, Conn.

